



# **Air Quality Permitting Statement of Basis**

**April 20, 2006**

**Permit No. P-050215**

**Poe Asphalt Paving, Inc., Portable**

**Facility ID No. 777-00084**

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**FINAL PERMIT**

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## Acronyms, Units, and Chemical Nomenclatures

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
g/sec	grams per second
gr/dscf	grain (1 lb = 7,000 grains) per dry standard cubic foot
HAPs	Hazardous Air Pollutants
HMA	hot-mix asphalt
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
K	Kelvin
kW	kilowatt
lb/hr	pound per hour
LPG	liquefied petroleum gas
µg/m <sup>3</sup>	micrograms per cubic meter
mg/m <sup>3</sup>	milligrams per cubic meter
MMBtu/hr	million British thermal units per hour
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
PCB	polychlorinated biphenyl
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
PWR	process weight rate
RAP	recycled asphalt pavement
RCRA	Resource Conservation and Recovery Act
RFO4	reprocessed fuel oil, Grade 4
SIC	Standard Industrial Classification
SM	synthetic minor
SO <sub>2</sub>	sulfur dioxide
TAP	toxic air pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound
%/o	weight percent

## 1. PURPOSE

The purpose of this document is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, Procedures and Requirements for Permits to Construct. This permit to construct (PTC) replaces PTC 777-00084, dated March 26, 1993, for the Poe Asphalt Paving, Inc. (Poe) Cedarapids #1900 portable hot-mix asphalt (HMA) facility.

## 2. FACILITY DESCRIPTION

The Poe Cedarapids #1900 portable HMA facility consists of a drum mix asphalt plant that includes a counterflow drum dryer, an aboveground asphalt oil storage tank with a tank heater, a baghouse, storage silos, conveyors and feed bins, aggregate stock piles, and haul trucks. An 800 kW generator supplies power to the facility when line power is not available.

Drum mix asphalt plants may be of either parallel flow design or the counterflow design. In either design, aggregate (gravel) is dried in the drum and mixed with liquid asphalt cement to produce hot-mix asphalt which is used primarily for road and parking lot construction. The production of hot-mix asphalt includes aggregate handling operations which may include front end loaders, storage bins, conveyance systems, stock piles and haul trucks.

## 3. FACILITY / AREA CLASSIFICATION

Table 3.1 shows the potential to emit for criteria air pollutants and hazardous air pollutant emissions from the drum dryer, asphalt tank heater, and generator for AIRS facility classification purposes. This estimate is based on an AP-42 uncontrolled emission factor for PM<sub>10</sub> (i.e., emissions without the baghouse), and operation of the drum dryer, tank heater, and generator at maximum capacity. The Poe Cedarapids #1900 HMA facility is classified as a synthetic minor facility because as shown in the table, without permit limits on its potential to emit, the total emissions of hazardous air pollutants (HAPs) would exceed 25 tons per year and the PM<sub>10</sub>, CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions would exceed 100 tons per year each. The AIRS classification is therefore "SM".

**Table 3.1 EMISSION INVENTORY ESTIMATES – PM AND CRITERIA POLLUTANTS**

Pollutant	POTENTIAL TO EMIT WITHOUT LIMITS <sup>a</sup>				POTENTIAL TO EMIT WITH PERMIT LIMITS			
	Drum Dryer	Asphalt Tank Heater	Generator	Total Emissions	Drum Dryer	Asphalt Tank Heater	Generator	Total Emissions
	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)	(T/yr)
PM (total)	67,452	0.135	3.29	67,455	6.60	0.0147	2.00	8.61
PM <sub>10</sub> (total)	15,659	0.135	1.63	15,660	4.60	0.0147	0.99	5.6
CO	313.2	0.763	28.0	342	26.0	0.0828	17.0	43.1
NO <sub>x</sub>	132.5	1.35	105	239	11.0	0.147	63.9	75.1
SO <sub>2</sub>	209.6	4.80	16.6	231	17.4	0.521	10.1	28.0
VOC	77.1	0.050	2.96	80.1	6.40	5.42E-03	1.80	8.21
Lead	3.61E-02	1.02E-04	0.0	0.0362	3.00E-03	1.11E-05	0.0	3.01E-03
Any HAP	7.47 <sup>b</sup>	---	---	7.47 <sup>b</sup>	0.620 <sup>b</sup>	---	---	0.622 <sup>b</sup>
Total HAPs	---	---	---	26.0	---	---	---	2.18

<sup>a</sup>Maximum operation without limits was very conservatively estimated as continuous, i.e., for 8,760 hours per year for each emission source. Downtime due to maintenance or relocation was not estimated.

<sup>b</sup>Highest single HAP emission is formaldehyde.

The facility is a portable facility and may locate anywhere in the state of Idaho except in any PM<sub>10</sub> nonattainment area.

The AIRS information provided in Appendix D defines the classification for each regulated air pollutant for the Poe Cedarapids #1900 portable HMA facility. This information is entered into the EPA AIRS database.

#### 4. APPLICATION SCOPE

Poe operates a portable HMA plant that was previously permitted to use a Cedarapids 100-48 CF drum dryer with a maximum rated heat input of 97 million British thermal units per hour (MMBtu/hr), and a maximum rated output of 550 tons of HMA per hour for a maximum of 2,400 hours per year (1,320,000 tons per year), fired using ASTM Grade 2 fuel oil. Particulate matter (PM) emissions from the drum dryer were described as being vented to a cyclone and a fabric filter, and the permit reflects the use of a Cedarapids Model 11060P/13 Fabric Filter, pulse jet type baghouse with an air to cloth ratio of 4.5 to 1, pressure drop of 2 to 4 inches of water, an air flow rate of 55,000 actual cubic feet per minute (acfm), and an exhaust temperature of 250 degrees Fahrenheit (°F). Electrical power was provided by a permitted 600 kW diesel generator. The existing permit requires that special DEQ approval must be received by the permittee prior to relocating to any PM<sub>10</sub> nonattainment area.

Poe has submitted a PTC application to allow burning Reprocessed Fuel Oil Grade 4 (RFO4)<sup>1</sup> used oil with a maximum sulfur content of 0.75 percent by weight (w/o) in addition to burning ASTM Grade 2 fuel oil to fire the drum dryer. The maximum throughput requested for the HMA plant is 550 tons per hour (T/hr), and 400,000 tons per consecutive 12-month period (tons per year, T/yr), operating a maximum of 24 hours per day. The application describes controlling the PM emissions from the drum dryer with a CMI Model 318 fabric filter baghouse with an air to cloth ratio of 4.5 to 1, pressure drop of 2 to 4 inches of water, an air flow rate of 38,134 acfm, and an exhaust temperature of 275°F.

When line power is not available, electrical power will be provided by an 800 kW generator that will operate for a maximum of 24 hours per day and a maximum of 5,314 hours per consecutive 12-month period.

The HMA plant is proposed to be initially located at the Poe Asphalt North Lewiston pit off Hatwai Road, approximately one mile east of Lewiston, and will not be collocated with any other HMA plant. The application does not include a request to operate in any PM<sub>10</sub> nonattainment area. Table 4.1 shows the comparison of the existing permitted operations and the changes proposed in this PTC.

**Table 4.1 SUMMARY OF EXISTING PERMITTED OPERATIONS AND PROPOSED CHANGES**

Operation/Process	Existing Permit No. 777-00084	Proposed Changes
Production	2,400 hours or 1,320,000 tons of HMA per year	400,000 tons per year
Drum Dryer Fuel	#2 Fuel Oil	#2 Fuel Oil with 0.5% sulfur and RFO4 (used oil) with 0.75% sulfur
Generator	600 kW	800 kW
Air Pollution Control Device	Cyclone/Fabric Filter	Fabric Filter

<sup>1</sup> ASTM D6448, Standard Specification for Industrial Burner Fuels from Used Lubricating Oils, describes Grades RFO4, RFO5L, RFO5H, and RFO6 as used lubricating oil blends, with or without distillate or residual oil, or both, of increasing viscosity and that are intended for use in industrial burners equipped to handle these types of recycled fuels. RFO4 is described as primarily a blend of used lubricating oils and distillate or a reprocessed distillate product derived from used oil. It is intended for use in pressure atomizing industrial burners with no preheating. This grade of recycled oil fuel is used in many medium capacity industrial burners where ease of handling justifies the higher cost over heavier used oil fuels.

#### **4.1 Application Chronology**

November 28, 2005	Receipt of PTC application.
December 13, 2005	Receipt of PTC application fee.
December 27, 2005	PTC application determined to be complete.
January 11, 2006	Public notice for an opportunity to comment was published.
January 23, 2006	Receipt of written request from Poe Asphalt for facility draft for review.
January 30, 2006	Receipt of Portable Equipment Registration and Relocation Form
January 30, 2006	DEQ requested additional information regarding the tank heater and used oil sulfur content.
February 2, 2006	Receipt of additional information for tank heater and used oil sulfur content.
February 8, 2006	Receipt of additional information regarding tank heater. Facility consultant noted that requested annual throughput far exceeded facility's planned operation based on annual fuel contract.
February 10, 2006	Public opportunity to comment period closed. No requests received.
March 27, 2006	Receipt of written request from Poe Asphalt to omit the facility review of a draft permit and to proceed with issuing a final permit.
April 5, 2006	Receipt of \$1,000 permit processing fee.
April 10, 2006	Comments received from DEQ Lewiston Regional Office.

#### **5. PERMIT ANALYSIS**

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

##### **5.1 Equipment Listing**

###### **HMA Plant:**

Manufacturer/Model:	Cedarapids/CMI Drum, Model 100-48 CF/PTD 400
Type of HMA plant:	Counterflow, tangentially fired drum mix
Rated heat input capacity:	97 MMBtu/hr
Allowed Fuel Type(s):	Natural gas, liquefied petroleum gas (LPG), propane, ASTM Grade 2 fuel oil, used oil, or Grade 4 reprocessed fuel oil (RFO4) at maximum 0.75% sulfur
Emissions Control device(s):	Baghouse, CMI Model CMI 318, 99.99% efficiency fabric filter
Stack parameters:	
Height: 23.6 ft	Exit gas volume: 38,134 acfm
Diameter: 3.67 ft	Exit gas temperature: 275°F
Aggregate Storage Bin(s):	Aggregate bin
Conveyor(s):	Enclosed aggregate feed conveyors, aggregate weigh conveyor, enclosed asphalt concrete slat conveyor
HMA Storage silo(s)/load-out:	Asphalt concrete silo/surge hopper

### **HMA Asphalt Storage Tank Heater**

Manufacturer/Model: Astec Industries, CEI Enterprises, Model CEI-1800  
Type: horizontally fired, circulating hot oil heater (indirect heat source)  
Rated heat input capacity: 2.115 MMBtu/hr  
Allowed Fuel Type(s): Natural gas or ASTM Grade 2 fuel oil  
Emissions Control device(s): None

#### **Stack Parameters:**

Height:	16 ft	Exit gas volume or velocity:	14.7 feet per second
Diameter:	0.8646 ft	Exit gas temperature:	350°F

### **Associated Equipment**

Aboveground Tanks: Asphalt Storage Tank #1300 – 21,000 gallon capacity  
Asphalt Storage Tank #1700 – 25,000 gallon capacity  
ASTM Grade 2 Fuel Oil Storage Tank #1325 – 12,000 gal cap.

### **Generator Set**

Manufacturer/Model: Caterpillar Model 3412  
Rating: 800 kW  
Allowed Fuel Type(s): ASTM Grade 2 fuel oil

#### **Stack Parameters:**

Height: 13 ft	Exit gas volume:	6,391 acfm
Diameter: 0.67 ft	Exit gas temperature:	957°F

## **5.2 Emissions Inventory**

### ***Emission Factors***

Emission estimates for the HMA drum dryer and load-out, silo filling and asphalt tank storage were based on emission factors from AP-42 Section 11.1, Hot Mix Asphalt Plants, March 2004, supplemented by emission factors from AP-42 Section 1.3, Fuel Oil Combustion, to evaluate the potential impact on SO<sub>2</sub> emissions when burning used oil with a sulfur content greater than 0.5<sup>w</sup>%. AP-42 emissions factors for drum mix asphalt plants are not dependent on whether the drum mix plant is a parallel flow or counterflow design. Consequently, emissions estimates developed for the drum mix plant would be applicable for either parallel flow drum mix plants or for counter flow drum mix plants.

Emission estimates for the asphalt tank heater were based on emission factors from AP-42 Sections 1.3, Fuel Oil Combustion, September 1998, and 1.4, Natural Gas Combustion, July 1998, with fuel heat values taken from table notes from those sections.

Emission estimates for the generator engine were based on emission factors from AP-42 Section 3.3, Gasoline and Diesel Industrial Engines (applicable to diesel engines up to 600 horsepower [hp]), October 1996, or Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines (for engines greater than 600 hp [447 kW]), October 1996, as appropriate.

Fugitive emissions from HMA silo filling and load-out and from asphalt tank storage were estimated using emission factors from AP-42 Section 11.1.

## **Facility Design and Operational Limits**

Emission estimates from the HMA plant were based on the operational limits shown in Table 5.1.

**Table 5.1 OPERATIONAL CONSTRAINTS USED FOR EMISSION ESTIMATES**

Emission Unit	Throughput or Fuel Usage		Hours of Operation	
	Throughput:	Throughput:		
Drum Dryer	550 T/hr	400,000 T/yr	24 hours/day	727 hours/yr
Load-out, Silo Filling & Asphalt Tank Storage	550 T/hr	400,000 T/yr	24 hours/day	727 hours/yr
Asphalt Tank Heater	Fuel use: 15 gallons per hour	Fuel use: 14,271 gallons per year	24 hours/day	951 hours/yr
Engine Generator	---	---	24 hours/day	5,314 hours/yr

T/hr = tons per hour

T/yr = tons per year

AP-42 Section 11.1.1.3 states that a counterflow drum mix plant can normally process recycled asphalt pavement (RAP) at ratios up to 50 percent with little or no observed effect upon emissions. Because data are not available to distinguish significant emissions differences between the parallel flow and counterflow process designs, RAP processing in parallel flow drum mixers is also assumed to have little or no observed effect upon emissions. Because of these findings, the permit allows processing of design aggregate that is comprised of up to 50 percent RAP.

Emission estimates for criteria pollutants, hazardous air pollutants (HAPs) and state-only toxic air pollutants (TAPs) are shown in Appendix A.

### **Emissions for Used Oil Fuels with Sulfur Content Greater than 0.5 Percent**

The AP-42 emission factors for a drum mix plant burning used oil do not specify the sulfur content of the used fuel oil. RFO4 is described in ASTM definitions as primarily a blend of used lubricating oils and distillate or a reprocessed distillate product derived from used oil. In Idaho, the sulfur content of distillate fuels is limited to a maximum of 0.5% w/o. The SO<sub>2</sub> emission rate from the drum dryer, therefore, was adjusted upwards by the ratio of SO<sub>2</sub> emissions at 0.75% sulfur and SO<sub>2</sub> emissions at 0.5% sulfur using AP-42 Section 1.3 emission factors for fuel oil burning equipment, based on drum dryer fuel consumption rates developed from the 97 MMBtu/hr heat input capacity for the dryer and AP-42 heat content values for ASTM Grade 2 fuel oil.

### **Emissions for Multiple Fuel Types**

The emission units and fuels evaluated for this PTC are summarized in Table 5.2. Emissions estimates were calculated separately for each emission source and for each fuel evaluated for use in that equipment. An emission estimate for each emission source was then developed by selecting the maximum value for each pollutant for any fuel type evaluated for that source. This represents a worst-case approach for conservatively evaluating the maximum potential emissions from each source regardless of which fuel type(s) the facility chooses to use.

For example, AP-42 emission factors for NO<sub>x</sub> emissions are 0.055, 0.055, 0.026, and 0.039 pounds per ton of HMA for a drum dryer fueled by ASTM Grade 2 fuel oil, used oil, natural gas, or LPG/propane, respectively. HMA drum dryer NO<sub>x</sub> emissions used to evaluate potential impacts on ambient air quality were based on the highest emission factor for any of these fuels, i.e., NO<sub>x</sub> emissions were based on an emissions factor of 0.055 pounds per ton of HMA produced.

**Table 5.2 EMISSION SOURCES, FUEL TYPES, AND EMISSION FACTORS**

<b>Emission Source</b>	<b>Fuel Type(s) Evaluated</b>	<b>Emission Factor Source</b>
HMA Drum Dryer with Fabric Filter (Baghouse)	ASTM Grade 2 Fuel Oil	AP-42, Section 11.1
	Used Oil (presumed max 0.5% S)	AP-42, Section 11.1
	Used Oil (RFO4) at 0.75% S	AP-42, Section 1.3
	Natural Gas	AP-42, Section 11.1
	LPG or Propane	AP-42, Section 11.1
Asphalt Tank Heater	ASTM Grade 2 Fuel Oil	AP-42, Section 11.1
	Natural Gas	AP-42, Section 11.1 AP-42, Section 1.4
Generator Engine (Generator < 600 hp [447 kW])	ASTM Grade 2 Fuel Oil	AP-42, Section 3.3
Generator Engine (Generator > 600 hp [447 kW])	ASTM Grade 2 Fuel Oil	AP-42, Section 3.4

***Change in Emissions Addressed in this PTC***

This PTC addresses only the changes in estimated emissions resulting from:

- Burning 0.75% sulfur RFO4, natural gas, LPG, propane, or ASTM Grade 2 fuel oil in the drum dryer instead of ASTM Grade 2 fuel oil
- Operating at a reduced annual throughput of 400,000 tons per year compared to the 1,320,000 tons per year allowed under 1993 Permit No. P-777-00084.
- Operating an 800 kW generator for 24 hours per day and 5,314 hours per year burning ASTM Grade 2 fuel oil instead of the ASTM Grade 2 (#2 diesel) fired 600 kW generator described in the 1993 permit.
- Increasing the allowable (permitted) emissions of PM<sub>10</sub> compared to the 1993 permit conditions to levels predicted by the current emissions inventory estimate.

Note that there have been significant revisions to AP-42 emission factors in the 13 years since the existing permit was issued; this accounts for some of the changes in estimated emissions for individual pollutants from the drum dryer and generator.

No information was available in the existing permit regarding capacity or hours of operation for the asphalt tank heater. No change in tank heater operations or emissions was estimated for this PTC.

The change in the emissions of criteria pollutants resulting from this PTC is shown in Table 5.3, which compares the allowable emissions from the drum dryer and 600 kW generator under the old permit to the current emissions inventory (estimated using AP-42 factors) for the drum dryer and an 800 kW generator. The relatively large change in the estimated emissions for the drum dryer is not due to adding the option to use RFO4 used oil as an optional fuel. The primary difference is that the old permit limits for the drum dryer--particularly for PM<sub>10</sub>, CO, and SO<sub>2</sub>—are markedly different compared to emissions estimated using current AP-42 emission factors.

The decrease in total emissions of hazardous air pollutants (HAPs) of 3.72 tons per year was estimated using current AP-42 emission factors and a throughput of 550 tons per hour for two cases: the existing permit limit of 2,400 hours per year (resulting in total HAPs emissions of 5.90 tons per year), and the estimated 727 hours per year of operation addressed in this PTC (resulting in total HAPs emissions of 2.18 tons per year).

**Table 5.3 PTC CHANGES TO EMISSION INVENTORY ESTIMATES – CRITERIA POLLUTANTS**

Pollutant	Existing Permitted Emissions Drum Dryer #2 Fuel Oil		Current PTC EI Drum Dryer Any Fuel		Existing Permitted Emissions Generator 600 kW #2 Fuel Oil		Current PTC EI Generator 800 kW #2 Fuel Oil		Total Change in Emissions	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
PM <sub>10</sub> (total)	2.7	3.3	12.65	4.60	1.7	2.0	0.373	0.99	8.623	0.29
CO	20.9	25.1	71.50	26.00	5.4	6.4	6.38	17.0	51.58	11.5
NO <sub>x</sub>	19.8	23.8	30.25	11.00	24.9	29.8	24.0	63.9	9.55	21.3
SO <sub>2</sub>	80.3	96.4	47.85	17.40	1.7	2.0	3.79	10.1	-30.36	-70.9
VOC	15.4	18.5	17.60	6.40	2.4	2.8	0.676	1.8	0.476	-13.1
Lead	U	U	8.25E-03	3.00E-03	U	U	0.0	0.0	---	---
Total HAPs	---	---	---	---	---	---	---	---	---	-3.72
<b>TOTAL</b>									39.9	-54.63

Notes: EI = Emissions Inventory (based on AP-42 emission factors), U = unknown

Based on AP-42 Section 11.1 emission factors, emissions of non-criteria pollutants in pounds per hour from the drum dryer are expected to be the same whether using ASTM Grade 2 fuel oil or used oil, except that 13 additional pollutants are emitted when using used oil (in this case, RFO4). Four of these additional pollutants—benzaldehyde, butyraldehyde, hexanal, and isovaleraldehyde—represent additional emissions of organic compounds. The emissions of the remaining nine new pollutants—five of which are regulated both as federally regulated HAPs and as Idaho toxic air pollutants (TAPs), with four others that are regulated only as Idaho TAPs—are shown in Table 5.4, and represent new TAPs emissions associated with this PTC.

The change in hourly TAPs emissions associated with increasing the generator size from 600 kW to 800 kW is also shown in Table 5.4. The hourly change was calculated only for TAPs for which the total potential to emit (i.e., emissions from the drum dryer, tank heater, and generator) was greater than the TAPs screening emission levels (EL) listed in IDAPA 58.01.01.585 or IDAPA 58.01.01.586. The change in hourly emissions for any other TAPs emitted from the generator would therefore be less than the screening EL. A complete list of all pollutants emitted is included in the emissions inventory contained in Appendix A.

As shown in Table 5.4, the increase in hourly emissions for six of these TAPs exceeded the screening ELs. Modeling was required to demonstrate preconstruction compliance with toxics standards for these six TAPs (see the modeling results section below).

**Table 5.4 PTC CHANGES TO EMISSION INVENTORY ESTIMATES – TOXIC AIR POLLUTANTS**

Pollutant	Drum Dryer RFO4 Used Oil	Generator 600kW	Generator 800kW	Generator Change	Total Change in Estimated Emissions		
	(lb/hr) <sup>c</sup>	(lb/hr) <sup>c</sup>	(lb/hr) <sup>c</sup>	(lb/hr) <sup>c</sup>	(lb/hr) <sup>c</sup>	EL (lb/hr) <sup>c</sup>	Exceeds TAPs EL?
Hydrogen chloride (HCl) <sup>a</sup>	0.116				0.116	0.05	Exceeds
<b>Non-Polycyclic Aromatic Hydrocarbon Hazardous Air Pollutants (non-PAH HAPs)</b>							
Acetaldehyde <sup>a</sup>	0.715	1.42E-04	1.89E-04	4.7E-05	0.715	0.003	Exceeds
Acrolein <sup>a</sup>	0.0143	4.44E-05	5.92E-05	1.48E-05	0.0143	0.017	No
Benzene <sup>a</sup>		4.37E-03	5.83E-03	1.46E-03	1.46E-03	8.00E-04	Exceeds
Formaldehyde <sup>a</sup>		4.44E-04	5.93E-04	1.49E-04	1.49E-04	5.10E-04	No
Methyl Ethyl Ketone <sup>a</sup>	0.0110	0.0	0.0	0.0	0.0110	39.3	No
Propionaldehyde <sup>a</sup>	0.0715	0.0	0.0	0.0	0.0715	0.0287	Exceeds
Quinone <sup>a</sup>	0.0880	0.0	0.0	0.0	0.0880	0.027	Exceeds
<b>PAH HAPs</b>							
Benzo(a)anthracene <sup>a</sup>		3.50E-06	4.67E-06	1.17E-06	POM		
Benzo(a)pyrene <sup>a</sup>		1.45E-06	1.93E-06	0.48E-06	POM		
Benzo(b)fluoranthene <sup>a</sup>		6.25E-06	8.34E-06	2.09E-06	POM		
Benzo(k)fluoranthene <sup>a</sup>		1.23E-06	1.64E-06	0.41E-06	POM		
Chrysene <sup>a</sup>		8.62E-06	1.15E-05	2.88E-06	POM		
Dibenzo(a,h)anthracene <sup>a</sup>		1.95E-06	2.60E-06	0.65E-06	POM		
Indeno(1,2,3-cd)pyrene <sup>a</sup>		2.33E-06	3.11E-06	0.78E-06	POM		
Polycyclic Organic Matter (POM) <sup>a</sup> (total of PAHs listed)		2.53E-05	3.02E-04	8.46E-06	8.46E-06	2.60E-06	Exceeds
<b>Non-HAP Organic Compounds</b>							
Acetone <sup>a</sup>	0.457	0.0	0.0	0.0	0.457	119	No
Crotonaldehyde <sup>a</sup>	0.0473	0.0	0.0	0.0	0.0473	0.38	No
Valeraldehyde <sup>a</sup>	0.0369	0.0	0.0	0.0	0.0369	11.7	No

<sup>a</sup>Idaho Toxic Air Pollutant

<sup>b</sup>lb/hr = pounds per hour

<sup>c</sup>T/yr = tons per consecutive 12-month period

### 5.3 Modeling

DEQ conducted screening-level modeling to demonstrate preconstruction compliance with ambient air quality standards for the increases in criteria pollutants (see Table 5.3) and with acceptable ambient concentration increments for emissions of TAPs that exceed screening emission levels (see Table 5.4). The modeling approach is described in Appendix B.

Stack parameters used in the SCREEN3 modeling analysis for point sources of emissions are shown in Table 5.5.

**Table 5.5 STACK PARAMETERS**

Stack Parameter	HMA Drum Dryer	Asphalt Tank Heater	Generator
Stack Height	23.6 ft (7.19 m)	16 ft (4.87 m)	13 ft (3.96 m)
Stack Diameter	3.67 ft (1.19 m)	0.8466 ft (0.264 m)	0.67 ft (0.20 m)
Exit Gas Volume	38,134 acfm	6,391 acfm	6,391 acfm
Exit Gas Velocity	---	14.7 ft/sec (4.48 m/sec)	---
Exit Gas Temperature	275 ° F (408.1 K)	957 ° F (449.8 K)	957 ° F (787.0 K)
Emission Rate	1.0 lb/hr (0.126 g/s)	1.0 lb/hr (0.126 g/s)	1.0 lb/hr (0.126 g/s)

acfm = actual cubic feet per minute  
m/s = meters per second

ft/sec = feet per second  
g/s = grams per second

lb/hr = pound per hour  
K = Kelvin

° F = degrees Fahrenheit

### Modeling Results – Changes in Emissions Resulting from this PTC

The results of DEQ's SCREEN3 modeling for the change in criteria pollutant ambient impacts associated with this PTC—using RFO4 fuel in the drum dryer, decreasing the drum dryer maximum annual HMA throughput, and estimated changes in emissions from generator operations—are shown in Table 5.6. As shown in the table, the increase in ambient air quality impacts was not significant, as defined in IDAPA 58.01.01.006, for CO, NO<sub>x</sub>, or SO<sub>2</sub> or for the annual impact from PM<sub>10</sub>.

Note that the increase in estimated PM<sub>10</sub> emissions shown in Table 5.3 is not the result of adding RFO4 used oil as an alternate fuel for the drum dryer. It is due to the difference between the PM<sub>10</sub> emissions estimated using current AP-42 emission factors (12.65 pounds per hour) and the very low PM<sub>10</sub> emission limit (2.7 pounds per hour) in the existing permit. The calculation of the short-term increase in the PM<sub>10</sub> ambient impact from these changes in allowable emissions for the HMA plant was predicted to be 8.66 µg/m<sup>3</sup>, which is significant (i.e., the 24-hour average exceeds 5µg/m<sup>3</sup>). In accordance with DEQ modeling guidance, facility-wide modeling for PM<sub>10</sub> emissions was therefore required (see below).

Information regarding lead emissions was not available in the existing permit, so the change in lead emissions associated with this PTC was not calculated. The total potential to emit for lead based on operating the HMA plant under the new permit conditions, however, was estimated at 0.003 tons per year, which is less than the 0.6 tons per year threshold that would trigger modeling requirements for this pollutant under DEQ's air quality modeling guidance.

**Table 5.6 AMBIENT IMPACTS FROM THIS PTC - CRITERIA POLLUTANTS**

Pollutant	Averaging Period	Maximum Predicted Ambient Impact (µg/m <sup>3</sup> )	Significant Contribution Level (µg/m <sup>3</sup> )	Significant Contribution?
<b>Criteria Pollutants</b>				
PM <sub>10</sub>	24-hour	8.66	5	Yes
	Annual	-0.64	1.0	No
CO	1-hour	212.4	2000	No
	8-hour	148.7	500	No
NO <sub>x</sub>	Annual	-0.30	1.0	No
SO <sub>2</sub>	3-hour	-146.8	25	No
	24-hour	-65.2	5	No
	Annual	0.08	1.0	No

The modeled concentration of any new emission or increased emission of toxic air pollutants related to this PTC did not exceed the acceptable ambient concentration increments, as shown in Table 5.7. Detailed modeling results are included in Appendix B.

**Table 5.7 AMBIENT IMPACTS FROM THIS PTC - TOXIC AIR POLLUTANTS**

Toxic Air Pollutants, Non-carcinogens	Averaging Period	Maximum Predicted Ambient Impact (µg/m <sup>3</sup> )	AAC <sup>a</sup> (mg/m3)	Percent of AAC
Hydrogen chloride (HCl)	24-hour	0.182	0.375	0.049%
Propionaldehyde	24-hour	0.113	0.0215	0.524%
Quinone	24-hour	0.139	0.020	0.694%
Toxic Air Pollutants, Non-carcinogens	Averaging Period	Maximum Predicted Ambient Impact (µg/m <sup>3</sup> )	AACC <sup>b</sup> (µg/m <sup>3</sup> )	Percent of AACC
Acetaldehyde	Annual	0.0293	0.450	6.5%
Benzene	Annual	1.47E-03	1.2E-01	1.2%
Polycyclic Organic Matter	Annual	8.49E-06	3.0E-04	2.8%

<sup>a</sup>AAC = Acceptable ambient concentration

<sup>b</sup>AACC = Acceptable ambient concentration for carcinogens

## Modeling Results – Facility-Wide

As described above, facility-wide modeling was required for PM<sub>10</sub>. Although not required, DEQ also conducted facility-wide modeling to determine whether the existing permit limits on the emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> were necessary to protect air quality. Table 5.8 shows the criteria pollutant emissions from the drum dryer, asphalt tank heater, generator, and from silo filling and loadout for this HMA plant under the operational constraints summarized in Table 5.1. These values reflect the maximum emissions inventory when using any of the fuel types listed in Table 5.2 for each emissions source.

**Table 5.8 EMISSION INVENTORY ESTIMATES –CRITERIA POLLUTANTS**

Pollutant	Drum Dryer		Asphalt Tank Heater		Generator		Silo Filling & Loadout		Total Emissions	
	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)
PM <sub>10</sub> (total)	12.65	4.60	0.0309	0.0147	0.373	0.990	0.287	0.104	13.3	5.71
CO	71.50	26.00	0.174	0.0828	6.38	17.0	0.742	0.270	78.8	43.4
NO <sub>x</sub>	30.25	11.00	0.309	0.147	24.0	63.9	---	---	54.6	75.0
SO <sub>2</sub>	47.85	17.4	1.10	0.521	3.79	10.1	---	---	52.7	28.0
VOC	17.60	6.40	1.14E-02	5.42E-03	0.676	1.80	0.0885	0.0322	18.4	8.24
Lead	8.25E-03	3.00E-03	2.33E-05	1.11E-05	0.0	0.0	---	---	8.27E-03	3.01E-03

The results of facility-wide modeling for PM<sub>10</sub>, CO, NO<sub>x</sub>, and SO<sub>2</sub> conducted by DEQ are shown in Table 5.9. Facility-wide modeling for these criteria pollutants included contributions from all point source stacks and fugitive emissions from HMA silo filling and load-out. Detailed modeling results are included in Appendix B.

**Table 5.9 FACILITY-WIDE AMBIENT IMPACTS**

Pollutant	Averaging Period	Maximum Predicted Ambient Impact (µg/m <sup>3</sup> )				Background Concentration (µg/m <sup>3</sup> )	Total Ambient Impact (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	Percent of NAAQS
		Drum Dryer	Tank Heater	Generator	Silo Fill & Loadout				
PM <sub>10</sub>	24-hour	19.95	1.43	1.97	40.65	73	137	150	91.3%
	Annual	0.331	0.03	0.24	0.70	26	27	50	54.6%
CO	1-hour	281.9	20.15	84.52	1042.3	3,600	5,029	40,000	12.6%
	8-hour	197.3	14.11	59.17	218.5	2,300	2,789	10,000	27.9%
NO <sub>2</sub>	Annual	0.792	0.31	15.44		17	34	100	33.5%
SO <sub>2</sub>	3-hour	169.8	114.11	45.20		34	363	1,300	27.9%
	24-hour	75.45	50.72	20.09		26	172	365	47.2%
	Annual	1.25	1.10	2.44		8	13	80	16.0%

## 5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

### IDAPA 58.01.01.201 ..... Permit to Construct Required

A PTC is required for this facility because, without limits on the potential to emit, the estimated PM<sub>10</sub>, CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions that may cause or contribute to a violation of the NAAQS would exceed 100 tons per year each and the total HAPs emissions would exceed 25 tons per year. Poe Asphalt has requested a permit to construct for a hot-mix asphalt plant to operate as a portable source within the State of Idaho. This is a modification to an existing permit to construct for this facility.

IDAPA 58.01.01.203 ..... National Ambient Air Quality Standards (NAAQS)

Because the estimated increase in short-term ambient impacts from PM<sub>10</sub> emissions related to this PTC was significant (greater than 5µg/m<sup>3</sup>), facility-wide modeling was conducted for PM<sub>10</sub> emissions. Modeling was based on the operational constraints listed in Table 5.1 and included PM<sub>10</sub> emissions from the drum dryer, tank heater, generator, and from silo filling and loadout.

Dispersion modeling using a screening level analysis for the change in emissions resulting from this PTC and screening level facility-wide modeling for PM<sub>10</sub> emissions demonstrates preconstruction compliance with IDAPA 58.01.01.203.02, i.e., demonstrates to DEQ's satisfaction that the facility would not cause or significantly contribute to a violation of any ambient air quality standard.

Because the air dispersion modeling predicts that ambient air concentrations may reach 91.2 percent of the 24-hour NAAQS for PM<sub>10</sub>, a daily PM<sub>10</sub> limit was established for the HMA drum dryer. A daily limit on HMA production limits PM<sub>10</sub> emissions generated by silo filling and loadout operations.

40 CFR 60 Subpart I ..... Standards of Performance for Hot-Mix Asphalt Facilities

New Source Performance Standards (NSPS) apply to hot mix asphalt facilities that commenced construction or modification after June 11, 1973. The March 26, 1993 PTC (P-777-00084) notes that the Cedarapids #1900 HMA facility was purchased new in 1993, and therefore it is an affected facility as defined by 40 CFR 60 Subpart I. The NSPS grain loading and opacity standards were included as permit conditions with compliance to be demonstrated by performance source tests.

40 CFR 279 ..... Standards for the Management of Used Oil

40 CFR 761 ..... Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

The facility specifically requested to combust on-specification used oil (RFO4), and the permit was written to allow its use. Resource Conservation and Recovery Act (RCRA) rules contained in 40 CFR 279.11 contain specifications for used oil which include maximum allowable levels for arsenic, cadmium, chromium, lead, the flash point, and total halogens. The maximum limit for total halogens is listed at 4,000 parts per million (ppm). However, used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste under the rebuttable presumption provided under Section 279.10(b)(1). Such used oil is subject to 40 CFR 266, Subpart H, "Hazardous Waste Burned in Boilers and Industrial Furnaces" when burned for energy recovery unless the presumption of mixing can be successfully rebutted. Therefore, the permit limits the total halogens to 1,000 ppm. This permit condition is consistent with previous permits issued for hot-mix asphalt plants<sup>2</sup>.

Permit Condition 3.7 states that, in accordance with 40 CFR 279.11, with the exception of total halogens which are limited to 1,000 ppm, used oil burned for energy recovery shall not exceed any of the allowable levels listed in the table included with that permit condition. Those limits are shown in Table 5.10 below. In addition, used oil may not contain a quantifiable level of PCBs. The quantifiable level—also called the detection limit—is defined in 40 CFR 761.3 as meaning "2 micrograms per gram from any resolvable gas chromatographic peak, i.e., 2 ppm." The emissions inventory for burning used oils is based on EPA AP-42 emission factors for waste oil fuels, which reflect these limits on contaminants in used oils. These permit conditions are considered reasonable permit conditions because they inherently limit air pollution emissions.

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<sup>2</sup> PTC-030138 Interstate Concrete, Hayden Lake, 2/18/05 & PTC-040101 Interstate Concrete, Rathdrum, 2/18/05

**TABLE 5.10 USED OIL SPECIFICATIONS<sup>1</sup>**

Constituent/property	Allowable Level for On Specification Used Oil
Arsenic	5 ppm <sup>2</sup> maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash point	100°F minimum
Total halogens	1,000 ppm maximum
PCBs <sup>3</sup>	< 2 ppm

<sup>1</sup> The specification does not apply to mixtures of used oil and hazardous waste that continue to be regulated as hazardous waste (see 40 CFR 279.10(b)).

<sup>2</sup> Parts per million

<sup>3</sup> Applicable standards for the burning of used oil containing PCBs are imposed by 40 CFR 761.20(e)

DEQ's Waste Program has reviewed and approved the above discussions regarding regulating used oil.

#### IDAPA 58.01.01.210..... Demonstration of Preconstruction Compliance with Toxic Standards

The change in the facility's estimated toxics emissions from this PTC include nine TAPs that are emitted when using RFO4 instead of ASTM Grade 2 fuel oil in the drum dryer burner, and increased TAPs emissions from switching from a 600 kW generator to an 800 kW generator. The emission estimates for these TAPs were predicted to be less than the corresponding screening emissions level increment in pounds per hour or were modeled to demonstrate that they would not exceed the applicable acceptable ambient concentration listed in IDAPA 58.01.01.585 (24-hr-average limits) or IDAPA 58.01.01.586 (annual limits for carcinogens).

The change in TAPs emissions was based on a maximum throughput of 550 tons of HMA per hour operating for 24 hours per day and a maximum of 400,000 tons of HMA per year for the drum dryer. Daily and annual HMA throughput limits were therefore established. The change in TAPs emissions was also based on maximum annual operation of the generator for 5,314 hours, which was suggested in the application based limiting the calculated NO<sub>x</sub> emissions from the generator to less than 100 tons per year. Because the annual limit on the drum dryer throughput would restrict the dryer operations to about 2,000 hours per year if operated at only 200 tons per hour (or at about 50% of the maximum design hourly throughput), and line power will likely be available at some or all of the site locations, the annual operations of the generator were determined to be inherently limited below 5,314 hours. An annual limit on the generator operations was therefore not established.

The comparison of the emission rates of the TAPs emissions against the screening ELs, combined with the modeling results, demonstrates to DEQ's satisfaction that the facility would be in compliance with carcinogenic and non-carcinogenic toxic air pollutant increments listed IDAPA 58.01.01.585 and IDAPA 58.01.01.586. In accordance with IDAPA 58.01.01.203.03, this also demonstrates preconstruction compliance with IDAPA 58.01.01.161.

#### IDAPA 58.01.01.006..... Fuel Burning Equipment

#### IDAPA 58.01.01.675..... Fuel Burning Equipment – Particulate Matter

The asphalt tank heater for this HMA facility uses a jacketed firebox and heat exchanger to heat and circulate heat transfer oil to warm the asphalt stored in the tank. This constitutes an indirect source of heat, which satisfies the IDAPA definition of fuel burning equipment. Particulate matter emission (grain loading) standards contained in IDAPA 58.01.01.676 apply only to fuel burning equipment with a maximum rated input of 10 MMBtu or greater. The asphalt tank heater is rated at 2.115 MMBtu and is therefore not subject to the IDAPA grain loading standard.

IDAPA 58.01.01.726 -728..... Definitions, Residual and Distillate Fuel Oil

RFO4 would be included in the IDAPA definition of residual fuel oils, which includes ASTM Grades 4, 5 and 6 fuel oils. RFO4 may contain varying amounts of used residual fuel oil in addition to used and new distillate fuel oil, so the sulfur content of RFO4 may exceed the 0.5% maximum imposed on ASTM Grade 2 distillate fuel oils, but could never exceed the 1.75% maximum sulfur content allowed for residual fuel oils. The basis for this PTC, however, reflects the applicant's request to burn used oil containing a maximum of 0.75% sulfur.

IDAPA 58.01.01.805 ..... Rules for Control of Hot-Mix Asphalt Plants

IDAPA 58.01.01.700-701..... Particulate Matter—Process Weight Limitations

Section 805 specifically requires that particulate matter emitted from hot-mix asphalt plants be subject to the process weight limitations contained in Sections 700 through 703. The HMA drum dryer began operations after October 1, 1979, and is therefore subject to Section 701. A comparison of the estimated PM emissions from the drum dryer based on AP-42 emission factors and the calculated process weight rate (PWR) emission limit for the entire range of throughputs (up and including the maximum design throughput of 550 tons per hour) for the drum dryer confirmed that PM emissions will not exceed PWR emission limits when the drum dryer is operated with a baghouse.

## **5.5 Permit Conditions Review**

This section describes only those permit conditions that have been revised, modified, or deleted as a result of this permit action. All other permit conditions remain unchanged.

### **Permit Condition 1 through 2.2**

Permit Conditions 1 through 2.2 contains the Purpose of the Permit, listing of the regulated sources and process description. The existing permit allows only ASTM Grade 2 fuel oil to fire the drum dryer. To reduce future needs for permit changes, this permit was developed to allow the use of multiple fuel types for the drum dryer and asphalt tank heater.

### **Permit Condition 3.1**

The existing permit (Condition 2.1.3) requires compliance with the NSPS opacity limit for the drum dryer. The 40 CFR 60.90 NSPS 20% opacity limit for Hot-Mix Asphalt Facilities is also included in the current permit and specifies the use of EPA Method 9 to demonstrate compliance.

### **Compliance Assurance**

Permit Condition 3.16 requires monthly see/no-see visible emissions monitoring for the drum dryer baghouse stack, and requires expeditious corrective action or performance of a Method 9 opacity test.

Permit Condition 3.17.1 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit.

Permit Condition 3.17.2 requires visible emissions testing to demonstrate compliance with the NSPS opacity limit once each five years. This testing is not required by NSPS but is a reasonable permit condition in accordance with IDAPA 58.01.01.211.01.

### **Permit Condition 3.2**

The existing permit (Conditions 2.1.3 and 2.2.2) requires compliance with the IDAPA 58.01.01.625 20% opacity limit for the drum dryer and generator. This permit clarifies that this requirement applies to emissions from any stack, chimney, vent, or other functionally equivalent opening (i.e., includes the asphalt tank heater stack). The 40 CFR 60.90 NSPS opacity limit and the IDAPA 58.01.01.625 opacity limit are different. The IDAPA 58.01.01.625 20% opacity limit is for a period or periods aggregating more than three minutes in any 60-minutes, the NSPS 20% opacity limitation is for all periods.

### **Compliance Assurance**

Permit Condition 3.16 requires monthly see/no-see visible emissions monitoring for the drum dryer baghouse stack, and requires expeditious corrective action or performance of a Method 9 opacity test.

Permit Condition 3.17.1 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit.

Permit Condition 3.17.2 requires visible emissions testing to demonstrate compliance with the IDAPA opacity limit once each five years.

### **Permit Condition 3.3**

The existing permit (Condition 2.1.1) requires compliance with the NSPS 0.04 grains per dry standard cubic foot (gr/dscf) limit for the drum dryer stack in accordance with 40 CFR Part 60.92(a)(1).

### **Compliance Assurance**

Permit Condition 3.17.1 contains the NSPS performance test, which is a one time performance test. If the one time NSPS performance test has already been conducted on the facility, this permit condition requires, as a reasonable permit condition (IDAPA 58.01.01.211), that the facility conduct a performance test within 60 days after achieving the maximum production rate at which the affected facility will operate but not later than 180 days after initial start up of the source.

Permit Condition 3.17.2 requires emissions testing to demonstrate compliance with the NSPS grain loading limit once each five years as a reasonable permit condition (IDAPA 58.01.01.211).

### **Permit Condition 3.4**

The existing permit (Conditions 2.1.1, 2.1.2, 2.2.1, and Appendix A) included hourly and annual limits for PM, PM<sub>10</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub>, and VOCs for the drum dryer and the generator.

For this permit, a PM emission limit was not established for the drum dryer. HMA throughput limits and the requirements of General Condition 2 will ensure that particulate matter emissions do not exceed 250 tons per year.

A pound per hour PM<sub>10</sub> limit equal to 120% of the estimated emissions rate for a throughput of 550 tons of HMA per hour was established for the drum dryer for comparison with results from the PM<sub>10</sub> source test(s) required in Permit Condition 3.17. Operation of the drum dryer at this hourly emissions rate (15.2 pounds per hour) would increase the facility-wide PM<sub>10</sub> ambient impacts from 91.3% to about 94% of the 24-hour PM<sub>10</sub> NAAQS.

About 82% of the total facility-wide PM is emitted from the drum dryer. An annual PM<sub>10</sub> emission limit equal to the estimated annual emissions rate in tons per year was established for the drum dryer to limit the facility's potential to emit below major source thresholds.

An emission limit on VOCs was omitted from this permit because without permit limits, the potential to emit VOCs was less than the major source threshold of 100 tons per year.

Specific emission rate limits were omitted in this permit for CO, NO<sub>x</sub>, and SO<sub>2</sub>. Permit limits on the drum dryer daily and annual throughput inherently limit the facility's potential to emit below major source thresholds for these pollutants. Hourly operational limits were not imposed because DEQ estimated that exceedance of the short-term NAAQS for SO<sub>2</sub> or CO would require increasing the hourly HMA throughput to more than 2,000 or 2,600 tons per hour, respectively (a four- to five-fold increase compared to the maximum design throughput capacity).

With permit limits, modeling predicted that ambient air quality impacts from all sources plus background were about 50 percent or less of the NAAQS for each of these pollutants (see Table 5.9 above and Table 5.11 below). Table 5.11 also shows that measured emissions from a June 25, 2002 drum dryer source test were comparable to the estimated emissions for CO, and considerably less than estimated emissions for NO<sub>x</sub>.

**Table 5.11 CO, NO<sub>x</sub>, and SO<sub>2</sub> AMBIENT IMPACTS**

Pollutant	Averaging Period	2002 Source Test (lb/hr)	Drum Dryer Emissions Inventory (lb/hr)	Facility-Wide Ambient Impact Sources + Background (Percent of NAAQS)
CO	1-hour	77.4	71.50	12.6%
	8-hour	77.4	71.50	27.9%
NO <sub>x</sub>	Annual	7.97	30.25	33.5%
SO <sub>2</sub>	3-hour	---	47.85	27.9%
	24-hour	---	47.85	47.2%
	Annual	---	47.85	16.0%

In accordance with IDAPA 58.01.01.210.08, if a TAP emission needs to be controlled to comply with the toxic increment, DEQ "shall include an emission limit for the toxic air pollutant in the permit to construct that is equal to or, if requested by the applicant, less than the emission rate that was used in the modeling." No credit was taken for any control of TAPs emissions by the drum dryer baghouse. The change in uncontrolled TAPs emissions (without limits and with no pollution control equipment) associated with this PTC exceed the applicable ELs for some TAPs, but do not exceed the applicable AAC or AACC increments, therefore, no TAPs emission limits were included in the permit.

#### **Compliance Assurance**

Permit Condition 3.6 limits the type of fuel that may be combusted; Permit Condition 3.7 limits the amount of lead, arsenic, cadmium, chromium, volatiles, halogens, and PCBs that may be present in any used fuel oil; Permit Condition 3.8 limits the amount of sulfur that may be present in the fuel oil; Permit Condition 3.9 limits daily and annual production to limit emissions to requested levels; and Permit Conditions 3.14, 3.18, and 3.19 require monitoring and recording of production throughput and fuel oil characteristics.

Permit Conditions 3.17.1 and 3.17.2 require performance testing to demonstrate compliance with PM<sub>10</sub> emission limits.

Particulate matter emissions are controlled by a baghouse. In order to assure the baghouse is operated as designed Permit Conditions 3.10 through 3.12 require that the facility write an O&M manual that will include baghouse pressure drop and periodic inspection requirements, and require the installation of a pressure drop monitor. Permit Condition 3.14 includes requirements for monitoring and recording the pressure drop and the results of periodic inspections.

### **Permit Condition 3.5**

The existing permit (Condition 2.3) requires reasonable control of fugitives with minimal recordkeeping (Condition 3.4). This permit includes a recitation of the rules to reasonably control fugitive dust.

### **Compliance Assurance**

Permit Condition 3.15 requires monthly monitoring to assure fugitive emissions are being reasonably controlled.

### **Permit Conditions 3.6, 3.7, and 3.8**

The existing permit (Conditions 2.4 and 4.5) limits the sulfur content of the fuel oil to 0.5% and limits the fuel used in the drum dryer to ASTM Grade 2 fuel oil. This permit allows greater flexibility in fuel options for the drum dryer and the asphalt tank heater.

### **Compliance Assurance**

Permit Conditions 3.18 and 3.19 require obtaining certification that used oil meets specifications and maintaining records showing the sulfur content of fuel oil on an as-received basis. Natural gas distributors in Idaho must meet pipeline quality gas specifications approved by the Idaho Public Utilities Commission, and LPG and propane distributors must meet similar specifications. Additional recordkeeping by the receiving facility was therefore not required for these gas fuels.

### **Permit Condition 3.9**

The existing permit (Conditions 4.1, 4.2, and 4.3) limits the HMA production rate to 550 tons per hour for a maximum of 2,400 hours per year. The new permit limits:

- The daily HMA production rate to ensure that the 24-hour PM<sub>10</sub> NAAQS is not exceeded. This limit—equal to a throughput of 550 tons of HMA per hour operating for a 24-hour day—was established because air dispersion modeling predicted that ambient air concentrations may reach 91.2 percent of the 24-hour NAAQS for PM<sub>10</sub>, and 95 percent of these emissions were from the drum dryer. An hourly throughput limit was not established because DEQ estimated that exceedance of the short-term NAAQS for CO and SO<sub>2</sub> would require operating the drum dryer at a rate that is four to five times the maximum design throughput capacity.
- Annual HMA production to ensure that major facility thresholds are not exceeded and to limit carcinogenic TAPs emissions.
- Daily use of recycled asphalt pavement to ensure that the design aggregate does not exceed 50 percent RAP.

### **Compliance Assurance**

Permit Condition 3.14 requires monitoring and recording of daily, monthly, and annual HMA production, the amount of RAP used per day.

### **Permit Condition 3.11**

The existing permit does not require development of an operations and maintenance (O & M) manual or monthly baghouse inspections. This permit requires that an O & M manual be developed within 60 days of permit issuance and that baghouse inspections be conducted monthly.

### **Compliance Assurance**

Permit Condition 3.11 requires that the O & M manual remain on site at all times. Permit Condition 3.14 requires recordkeeping for monthly inspections.

### **Permit Condition 3.13**

The existing permit does not address collocation. This permit prohibits collocation with any other HMA plant.

### **Compliance Assurance**

Permit Condition 3.20 requires submittal of a complete Portable Equipment Registration and Relocation Form (PERF), which includes describing any intent to collocate.

### **Permit Condition 4**

The existing permit (Permit Condition 5.4) prohibits operation in any area designated as nonattainment for any pollutant listed in Appendix A to that permit (PM, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOCs, and CO). The analysis for the current permit demonstrated that the increase in allowable emissions of criteria pollutants (other than PM<sub>10</sub>) would not significantly contribute to any violation of the NAAQS.

Permit Condition 4 of the current permit prohibits the facility's operations only in any PM<sub>10</sub> nonattainment areas. The permittee did not request authorization to operate in PM<sub>10</sub> nonattainment areas, and the analysis in this Statement of Basis demonstrated that the increase in the allowable emissions of PM<sub>10</sub> associated with this PTC would result in a significant contribution (defined in IDAPA 58.01.01.006 as an increase greater than 5µg/m<sup>3</sup>) to a violation of the PM<sub>10</sub> NAAQS.

### **Compliance Assurance**

Permit Condition 4 requires the permittee to contact DEQ for current area status and more specific details about the PM<sub>10</sub> nonattainment area boundaries. An interactive map showing the boundaries of nonattainment areas can also be accessed on the DEQ website using the following steps to zoom in to map levels showing named streets:

1. Access the DEQ website at <http://www.deq.state.id.us/>;
2. Select Maps & Data, Interactive Mapping;
3. Click on the link to the Air Quality Monitoring Website, <http://mapserver.deq.state.id.us/Website/emissions/viewer.htm>; and
4. Zoom in on the area of interest by selecting the "+" icon and clicking on the interactive map.

### **Remaining Permit Conditions**

The permit conditions that have not been discussed in this document are self explanatory and are not included in this statement of basis.

## **6. PERMIT FEES**

Poe Asphalt paid the \$1,000 permit to construct application fee as required in IDAPA 58.01.01.224 on December 13, 2005.

A permit to construct processing fee of \$1,000 is required in accordance with IDAPA 58.01.01.225 because the increase in emissions from the changes associated with this PTC is less than one ton per year. The fee calculation spread sheet can be found in Appendix C. Poe Asphalt paid the processing fee on April 5, 2006.

Poe Asphalt is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees to support the Tier I operating permit program are not applicable in accordance with IDAPA 58.01.01.387.

## **7. PERMIT REVIEW**

### **7.1 *Regional Review of Draft Permit***

On April 6, 2006, the Lewiston Regional Office was given a draft of the permit and statement of basis for review. By April 10, the Region provided comments which, after discussion with DEQ State Office permitting and enforcement, resulted in deleting a requirement prohibiting visible fugitive dust emissions leaving the property boundary for any period aggregating more than three minutes in any 60-minute period, as determined by Method 22 or by a DEQ-approved alternate method.

### **7.2 *Facility Review of Draft Permit***

On January 23, 2006, the facility requested a draft of the permit be given to them for review. On March 27, 2006, the facility retracted their request for a facility draft and instead requested that the permit be issued as a final.

### **7.3 *Public Comment***

An opportunity for public comment period on the PTC application was provided from January 11, 2006, through February 10, 2006, in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

## **8. RECOMMENDATION**

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommends that Poe Asphalt Paving, Inc. be issued a final PTC No. P-050215 for the Cedarapids #1900 portable HMA facility. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

DP/CR/bf

Permit No. P-050215

G:\Air Quality\Stationary Source\SS Ltd\PTC\Poe Asphalt\Final\P-050215 Poe Asphalt HMA Final SB\_041806.doc

**APPENDIX A**

**EMISSIONS INVENTORY**

**P-050215**

Current PTC Emission Inventory (EI) Estimates	7 pages
Current PTC EI, AIRS Classification PTE, No Limits, Uncontrolled	3 pages
Existing (March 26, 1993) Permit No. 777-00084 Emission Estimates	5 pages

## CURRENT PTC APPLICATION ESTIMATES

### DEQ Verification Worksheets: Hot Mix Asphalt (HMA) Drum Mix Facility Data

Facility ID/AMS No.	777-00084	Spreadsheet Date	4/18/2008 17:57
Permit No.	P-050218	HMA Type: Drum Mix or Batch ?	Drum Mix
Facility Owner/Company Name:	Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900	Include S&O Fill & Loadout Emissions?	Y
Address:	302 15th Street		
City, State, Zip:	Clarkston, WA 99603		
Facility Contact:	Joel Smith, Highway Division Manager		
Contact Number/ e-mail:	(509) 768-6661		
In this HMA facility subject to NSPS? Yes=1, No=0	1	Commenced Operations in:	1993
Use Short Term Source Factor on 686 ELs? Y or N	N	Use Y-RACT on 686 AACCT Y/N	N

**PTC & FACWIDE  
ESTIMATES**

Hot Mix Plant AP-42 Section 11.1)	Input (Bold Color) or Calculated Value (Black)	Fuel Type(s)	Fuel Type Toggle ("0" or "1")
Drum Dryer Make/Model	Cedarapids/PTD 400/97 MMBtu	#2 Fuel Oil	1
Rated heat input capacity, MMBtu/hr	97	Used Oil or RFO4 Oil	1
Drum Dryer Hourly Throughput, Tons/hr	550	Natural Gas	1
Hours of operation per day	24	LPG or Propane	1
Hours of operation per year (=Throughput Annual/Hourly)	727	Exit Gas Volume (scfm)	38,134
Max Throughput at Annual Hours, Tons/yr	400,000	Exit Gas Temperature (°F)	275
Max Throughput (Proposed Limit), T/yr	400,000	Stack Pressure (in Hg)	
Used Oil max sulfur content (Default is 0.5%)	0.75%	Stack Moisture Content, %	

Note: (108 Btu/MMBtu) x (97 MMBtu/hr) / (137,030 Btu/gal) = 708 gal/hr.  
But Annual Fuel contract = 330,000 gal/yr = 454 gal/hr on average. (Analysis is based on 708 gal/hr)

Asphalt Tank Heater AP-42, Section 11.1 (oil or natural gas fuel), or Section 1.4 (natural gas fuel)			
Rated heat input capacity (MMBtu)	2.115	Fuel Type(s)	Fuel Toggle
Hours of operation per day	24	#2 Fuel Oil	1
Operation, days per year	39.63	Used Oil	0
Hours of operation per year	951	Natural Gas	1
Exit Flow (scfm) or Velocity (fps) FPS	14.7 fps	Indirect Heat or Power? Y or N	Y
Exhaust exit gas temperature (°F)	350		

Tank Heater Fuel Consumption	#2 Fuel Oil	Natural Gas	Note for Poe:
Heat Input Rating (MMBtu/hr)	2.115	2.115	#2 Fuel Usage
Fuel Heating Value, Btu/gal (oil) or Btu/scf (gas)	137,030	1,020	14,371 gal/yr
Heating Value Correction for Natural Gas EFs, see Note	n/a	1,029	@15 gal/hr =
Theoretical Max Fuel Use Rate gal/hr (oil) or scf/hr (gas)	15.43	2,014	951.4
Max Operational Hours per Year (Proposed Limit)	951.0	951	hours per year

Note: AP-42 EFs for natural gas combustion (Tables 1.4-xx) are based on heat value of 1,020 Btu/scf. EFs for other fuel heating values must be multiplied by the ratio of the specified heating value to 1,020.

Electrical Generator < 600 hp (447 kW) AP-42 Section 3.3 (diesel fueled)			
Generator Make/Model	#2 Fuel Oil (Diesel)	Fuel Type(s)	Fuel Toggle
	Gasoline		0
EF OPTIONS: Use EFs in lb/HP-hr	Use EFs in lb/MMBtu		0
1) Input Rated Capacity, kW	Max Fuel Use Rate, gal/hr		
Spreadsheet conversion from kW to hp:	Fuel Heating Value, Btu/gal		
on 2) Input Rated Capacity, hp	Calculated MMBtu/hr		
Max Operational Hours/Day	Max Operational Hours/Day		
Max Operational Hours per Year (Proposed Limit)	Max Operational Hours/Year		

Electrical Generator > 600 hp (447 kW) AP-42 Section 3.4 (diesel or dual fuel)			
Generator Make/Model	Caterpillar Model 3412	Fuel Type(s)	Fuel Toggle
	800 kW	#2 Fuel Oil (Diesel)	1
FUEL OPTIONS: #2 Fuel Oil (Diesel)		Dual Fuel (diesel/natural gas)	0
Max Sulfur weight percent (w/o)	0.5	Natural Gas Fuel	
Max Fuel Use Rate, gal/hr	84.81	Max Sulfur w/o	
Fuel Heating Value, Btu/gal	137,030	Max Fuel Use Rate, scf/hr	
Calculated MMBtu/hr	7.51	Fuel Heating Value, Btu/scf	
Max Operational Hours per Day	24	Calculated MMBtu/hr	
Max Operational Hours per Year	8,314	Max Operational Hours per Day	
		Max Operational Hours per Year	

Note: AP-42 Table 3.4-1 EFs are based on dual fuel operation of 5% diesel and 95% natural gas.

Note: AP-42 Tables 3.3-x, 3.4-x: avg diesel heating value is based on 19,300 Btu/lb with density equal 7.1 lb/gal => Btu/gal = 137,030

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 4/20/2008 9:48 Permit/Facility ID: P-060216 777-00084

## CURRENT PTC ESTIMATES

### EMISSION INVENTORY

POUNDS PER HOUR

Page 1 of 2

Maximum Controlled Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Store  
 A. Drum Mix Plant: 688 Tons/hour 727 Hours/year 408,988 Tons/year HMA throughput  
 Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Used Oil 24 hrs/day Natural Gas LPG/Propane  
 B. Tank Heater: 2.1166 MBtu/hr 961 Hours/year  
 Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 24 hrs/day Natural Gas  
 C. Generator: 54.81 gal/hour 5314 Hours/year Generator=6000

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C Generator Max Emission Rate for Pollutant (lb/hr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PM (total)	18.15	3.09E-02	7.51E-01	2.87E-01	19.22
PM-10 (total)	12.65	3.09E-02	3.73E-01	2.87E-01	13.34
PM-2.5	1.60	0.00E+00	0.00E+00	2.87E-01	1.88
CO	71.50	1.74E-01	6.38E+00	7.42E-01	78.80
NOx	30.28	3.09E-01	2.40E+01		54.59
SO <sub>2</sub>	47.65	1.10E+00	3.79E+00		52.74
VOC	17.60	1.14E-02	6.76E-01	8.45E-02	18.38
Lead	8.25E-03	2.33E-05	0.00E+00		8.27E-03
HCl <sup>a</sup>	1.18E-01	0.00E+00	0.00E+00		1.18E-01
Dioxins <sup>a</sup>					
2,3,7,8-TCDD	1.16E-10	0.00E+00	0.00E+00		1.16E-10
Total TCDD	5.12E-10	0.00E+00	0.00E+00		5.12E-10
1,2,3,7,8-PeCDD	1.71E-10	0.00E+00	0.00E+00		1.71E-10
Total PeCDD	1.21E-08	0.00E+00	0.00E+00		1.21E-08
1,2,3,4,7,8-HxCDD	2.31E-10	1.06E-11	0.00E+00		2.42E-10
1,2,3,6,7,8-HxCDD	7.15E-10	0.00E+00	0.00E+00		7.15E-10
1,2,3,7,8,9-HxCDD	5.39E-10	1.17E-11	0.00E+00		5.51E-10
Total HxCDD	6.60E-09	0.00E+00	0.00E+00		6.60E-09
1,2,3,4,6,7,8-HpCDD	2.64E-09	2.32E-10	0.00E+00		2.87E-09
Total HpCDD	1.05E-08	3.09E-10	0.00E+00		1.08E-08
Octa CDD	1.38E-08	2.47E-09	0.00E+00		1.62E-08
Total PCDD <sup>a</sup>	4.35E-08	3.09E-09	0.00E+00		4.65E-08
Furans <sup>a</sup>					
2,3,7,8-TCDF	5.34E-10	0.00E+00	0.00E+00		5.34E-10
Total TCDF	2.04E-09	5.09E-11	0.00E+00		2.09E-09
1,2,3,7,8-PeCDF	2.37E-09	0.00E+00	0.00E+00		2.37E-09
2,3,4,7,8-PeCDF	4.62E-10	0.00E+00	0.00E+00		4.62E-10
Total PeCDF	4.62E-09	7.41E-12	0.00E+00		4.62E-09
1,2,3,4,7,8-HxCDF	2.20E-09	0.00E+00	0.00E+00		2.20E-09
1,2,3,6,7,8-HxCDF	6.60E-10	0.00E+00	0.00E+00		6.60E-10
2,3,4,6,7,8-HxCDF	1.05E-09	0.00E+00	0.00E+00		1.05E-09
1,2,3,7,8,9-HxCDF	4.62E-09	0.00E+00	0.00E+00		4.62E-09
Total HxCDF	7.15E-09	3.09E-11	0.00E+00		7.15E-09
1,2,3,4,6,7,8-HpCDF	3.58E-09	0.00E+00	0.00E+00		3.58E-09
1,2,3,4,7,8,9-HpCDF	1.49E-09	0.00E+00	0.00E+00		1.49E-09
Total HpCDF	5.06E-09	1.50E-10	0.00E+00		5.08E-09
Octa CDF	2.64E-09	1.85E-10	0.00E+00		2.83E-09
Total PCDF <sup>a</sup>	2.20E-08	4.78E-10	0.00E+00		2.25E-08
Total PCDD/PCDF <sup>a</sup>	6.60E-08	3.66E-09	0.00E+00		6.95E-08
Non-PAH NAPs					
Acetaldehyde <sup>a</sup>	7.15E-01	0.00E+00	1.80E-04		7.15E-01
Acrolein <sup>a</sup>	1.43E-02	0.00E+00	5.92E-05		1.44E-02
Benzene <sup>a</sup>	2.15E-01	4.35E-06	3.83E-03	3.33E-03	2.24E-01
1,3-Butadiene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylbenzene <sup>a</sup>	1.32E-01	0.00E+00	0.00E+00	1.90E-02	1.32E-01
Formaldehyde <sup>a</sup>	1.71E+00	1.59E-04	5.93E-04	4.83E-02	1.75E+00
Hexane <sup>a</sup>	5.08E-01	3.73E-03	0.00E+00		5.10E-01
Isocetane <sup>a</sup>	2.20E-02	0.00E+00	0.00E+00	6.20E-05	2.21E-02
Methyl Ethyl Ketone <sup>a</sup>	1.10E-02	0.00E+00	0.00E+00	3.73E-03	1.47E-02
Pentane <sup>a</sup>	0.00E+00	5.39E-03	0.00E+00		5.39E-03
Propionaldehyde <sup>a</sup>	7.15E-02	0.00E+00	0.00E+00		7.15E-02
Quinone <sup>a</sup>	8.80E-02	0.00E+00	0.00E+00		8.80E-02
Methyl chloroform <sup>a</sup>	2.64E-02	0.00E+00	0.00E+00	0.00E+00	2.64E-02
Toluene <sup>a</sup>	1.80E+00	7.05E-06	2.11E-03	8.98E-03	1.81E+00
Xylene <sup>a</sup>	1.10E-01	0.00E+00	1.45E-03	3.36E-02	1.43E-01
PAH NAPS					
2-Methylnaphthalene	9.35E-02	4.98E-06	0.00E+00	1.18E-02	1.05E-01
3-Methylchloranthrene <sup>a</sup>	0.00E+00	3.73E-09	0.00E+00		3.73E-09
Acenaphthene	7.70E-04	8.18E-06	3.51E-06	1.14E-03	1.96E-03
Acenaphthylene	1.21E-02	3.09E-06	8.93E-06	7.21E-05	1.22E-02
Anthracene	1.71E-03	2.78E-06	9.24E-06	3.13E-04	2.03E-03
Benzo(a)anthracene <sup>a</sup>	1.16E-04	3.73E-06	4.87E-06	1.14E-04	2.34E-04
Benzo(b)pyrene <sup>a</sup>	5.38E-06	2.49E-06	1.93E-06	4.31E-06	1.16E-05
Benzo(k)fluoranthene <sup>a</sup>	5.50E-06	1.54E-06	8.34E-06	1.43E-06	7.91E-06
Benzo(e)pyrene	8.05E-06	0.00E+00	0.00E+00	2.79E-06	8.84E-06
Benzo(a,h)fluoranthene	2.20E-06	2.49E-06	4.18E-06	3.56E-06	2.97E-06
Benzo(k)fluoranthene <sup>a</sup>	2.26E-06	3.73E-06	1.84E-06	4.13E-06	2.63E-06
Chrysene <sup>a</sup>	9.90E-06	3.73E-06	1.19E-06	4.86E-06	5.97E-06
Dibenz(a,h)anthracene	0.00E+00	2.49E-06	2.80E-06	6.94E-07	3.29E-06
Dichlorobenzene	0.00E+00	2.49E-06	0.00E+00		2.49E-06
Fluoranthene	3.36E-04	6.79E-07	3.03E-06	3.03E-04	8.70E-04
Fluorene	8.05E-03	4.94E-07	9.61E-06	2.65E-03	8.00E-03
Indeno(1,2,3-cd)pyrene <sup>a</sup>	3.95E-06	3.73E-06	3.11E-06	8.81E-07	7.84E-06
Naphthalene <sup>a</sup>	3.58E-01	2.82E-04	9.78E-04	4.89E-03	3.63E-01
Phenanthrene	4.84E-06	0.00E+00	0.00E+00	8.31E-05	8.80E-06
Phenanthrene	1.27E-02	7.56E-05	3.04E-04	4.03E-03	1.71E-02
Pyrene	1.65E-03	4.94E-07	2.79E-06	8.96E-04	2.57E-03
Non-PAH Organic Compounds					
Acetone <sup>a</sup>	4.57E-01	0.00E+00	0.00E+00	4.78E-03	4.61E-01
Benzaldehyde	6.05E-02	0.00E+00	0.00E+00		6.05E-02
Butane	3.69E-01	4.35E-03	0.00E+00		3.73E-01
Butyraldehyde	8.80E-02	0.00E+00	0.00E+00		8.80E-02
Crotonaldehyde <sup>a</sup>	4.73E-02	0.00E+00	0.00E+00		4.73E-02
Ethylene	3.55E+00	0.00E+00	0.00E+00	9.00E-02	3.94E+00
Heptane	6.17E+00	0.00E+00	0.00E+00		5.17E+00
Hexanal	6.05E-02	0.00E+00	0.00E+00		6.05E-02
Isovaleraldehyde	1.78E-02	0.00E+00	0.00E+00		1.78E-02
2-Methyl-1-pentene	2.20E+00	0.00E+00	0.00E+00		2.20E+00
2-Methyl-2-butene	3.19E-01	0.00E+00	0.00E+00		3.19E-01
3-Methylpentane	1.05E-01	0.00E+00	0.00E+00		1.05E-01
1-Pentane	1.21E+00	0.00E+00	0.00E+00		1.21E+00
n-Pentane	1.16E-01	0.00E+00	0.00E+00		1.16E-01
Valeraldehyde <sup>a</sup>	3.69E-02	0.00E+00	0.00E+00		3.69E-02
Metals					
Antimony <sup>a</sup>	9.90E-05	8.10E-05	0.00E+00		1.80E-04
Arsenic <sup>a</sup>	3.08E-04	2.04E-05	0.00E+00		3.28E-04
Barium <sup>a</sup>	3.19E-03	3.97E-05	0.00E+00		3.23E-03
Beryllium <sup>a</sup>	0.00E+00	4.29E-07	0.00E+00		4.29E-07
Cadmium <sup>a</sup>	2.26E-04	6.14E-06	0.00E+00		2.32E-04
Chromium <sup>a</sup>	3.03E-03	1.30E-06	0.00E+00		3.04E-03
Cobalt <sup>a</sup>	1.43E-05	9.29E-05	0.00E+00		1.07E-04
Copper <sup>a</sup>	1.71E-03	2.72E-05	0.00E+00		1.73E-03
Hexavalent Chromium <sup>a</sup>	2.49E-04	3.83E-06	0.00E+00		2.51E-04
Manganese <sup>a</sup>	4.24E-05	4.83E-05	0.00E+00		4.28E-05
Mercury <sup>a</sup>	1.43E-03	1.74E-06	0.00E+00		1.43E-03
Molybdenum <sup>a</sup>	0.00E+00	1.21E-05	0.00E+00		1.21E-05
Nickel <sup>a</sup>	3.47E-02	1.30E-03	0.00E+00		3.60E-02
Phosphorus <sup>a</sup>	1.54E-02	1.48E-04	0.00E+00		1.55E-02
Silver <sup>a</sup>	2.64E-04	0.00E+00	0.00E+00		2.64E-04
Selenium <sup>a</sup>	1.83E-04	1.05E-05	0.00E+00		2.03E-04
Thallium <sup>a</sup>	2.28E-06	0.00E+00	0.00E+00		2.28E-06
Vanadium <sup>a</sup>	0.00E+00	4.91E-04	0.00E+00		4.91E-04
Zinc <sup>a</sup>	3.36E-02	4.49E-04	0.00E+00		3.40E-02

a) IDAPA Toxic Air Pollutant

Facility:

Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900

# CURRENT PTC ESTIMATES

4/20/2008 9:48

Permit/Facility ID: P-050215 777-00084

## EMISSION INVENTORY

POUNDS PER HOUR

Page 2 of 2

Age Max Emissions of Any Pollutant from Drum Mix HMA Plant: Fabric Filter, Tank Heater, Generator, Load-out/Ship/Asphalt Storage

A. Drum Mix Plant: 666 Tons/hour 737 Hours/year 499,999 Tons/year HMA throughput 24 hrs/day  
 Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Used Oil Natural Gas LPG/Propane  
 B. Tank Heater: 2.1166 MMbtu Rated 981 Hours/year 24 hrs/day  
 Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Natural Gas  
 C. Generator: 64.81 gal/hr 6316 Hours/year 24 hrs/day  
 #2 Fuel Oil Generator=600hp

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C Generator Max Emission Rate for Pollutant (lb/hr)	D Load-out, Site Filling, & Tank Storage Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
non-PAH HAPs					
Bromomethane <sup>a</sup>				3.32E-04	3.32E-04
2-Butanone (aka Methyl Ethyl Ketone)				0.00E+00	0.00E+00
Carbon disulfide <sup>a</sup>				6.63E-04	6.63E-04
Chloroethane (Ethyl chloride <sup>a</sup> )				9.63E-05	9.63E-05
Chloromethane (Methyl chloride <sup>a</sup> )				6.69E-04	6.69E-04
Cumene				2.52E-03	2.52E-03
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane <sup>a</sup> )				6.18E-06	6.18E-06
MTBE				0.00E+00	0.00E+00
Styrene <sup>a</sup>				2.91E-04	2.91E-04
Tetrachloroethane (Tetrachloroethylene <sup>a</sup> )				1.76E-04	1.76E-04
1,1,1-Trichloroethane (Methyl chloroform)				0.00E+00	0.00E+00
Trichloroethane (Trichloroethylene <sup>a</sup> )				0.00E+00	0.00E+00
Trichlorofluoromethane				2.97E-06	2.97E-06
m-p-Xylene <sup>a</sup>				1.40E-02	1.40E-02
o-Xylene <sup>a</sup>				1.98E-02	1.98E-02
Phenol <sup>a</sup>				2.21E-03	2.21E-03
Non-HAP Organic Compounds					
Methane				7.43E-01	7.43E-01

e) IDAPA Toxic Air Pollutant

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 4/20/2006 9:49 Permit/Facility ID: P-050215 777-00064

## CURRENT PTC ESTIMATES

### EMISSION INVENTORY

TONS PER YEAR Page 1 of 2

Maximum Controlled Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Store  
 A. Drum Mix Plant: 550 Tons/year 727 Hours/year 468,000 Tons/year HMA throughput  
 Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Used Oil 24 hr/day Natural Gas LPG/Propane

B. Tank Heater: 2,1150 MMBtu/Ras 881 Hours/year  
 Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 24 hr/day Natural Gas

C. Generator: 64.81 gal/hour 6314 Hours/year Generator=6000w

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
PM (total)	6.60	1.47E-02	2.00E+00	1.04E-01	8.61
PM-10 (total)	4.60	1.47E-02	8.90E-01	1.04E-01	5.60
PM-2.5	0.58	0.00E+00	0.00E+00	1.04E-01	0.69
CO	26.00	8.28E-02	1.70E+01	2.70E-01	43.03
NOx	11.00	1.47E-01	6.39E+01		73.01
SO <sub>2</sub>	17.40	5.21E-01	1.01E+01		28.00
VOC	6.40	5.42E-03	1.80E+00	3.22E-02	8.20
Lead	3.00E-03	1.11E-06	0.00E+00		3.01E-03
HCl <sup>a</sup>	4.20E-02	0.00E+00	0.00E+00		4.20E-02
Dioxin <sup>a</sup>					
2,3,7,8-TCDD	4.20E-11	0.00E+00	0.00E+00		4.20E-11
Total TCDD	1.96E-10	0.00E+00	0.00E+00		1.96E-10
1,2,3,7,8-PeCDD	6.20E-11	0.00E+00	0.00E+00		6.20E-11
Total PeCDD	4.40E-09	0.00E+00	0.00E+00		4.40E-09
1,2,3,4,7,8-HxCDD	8.40E-11	5.06E-12	0.00E+00		8.91E-11
1,2,3,6,7,8-HxCDD	2.80E-10	0.00E+00	0.00E+00		2.80E-10
1,2,3,7,8,9-HxCDD	1.96E-10	5.58E-12	0.00E+00		2.02E-10
Total HxCDD	2.40E-09	0.00E+00	0.00E+00		2.40E-09
1,2,3,4,6,7,8-HpCDD	9.60E-10	1.10E-10	0.00E+00		1.07E-09
Total HpCDD	3.80E-08	1.47E-10	0.00E+00		3.95E-08
Octa CDD	5.00E-09	1.17E-08	0.00E+00		6.17E-09
Total PCDD	1.58E-08	1.47E-08	0.00E+00		1.73E-08
Furan <sup>a</sup>					
2,3,7,8-TCDF	1.94E-10	0.00E+00	0.00E+00		1.94E-10
Total TCDF	7.40E-10	2.42E-11	0.00E+00		7.64E-10
1,2,3,7,8-PeCDF	8.60E-10	0.00E+00	0.00E+00		8.60E-10
2,3,4,7,8-PeCDF	1.58E-10	0.00E+00	0.00E+00		1.58E-10
Total PeCDF	1.68E-08	3.52E-12	0.00E+00		1.68E-08
1,2,3,4,7,8-HxCDF	8.00E-10	0.00E+00	0.00E+00		8.00E-10
1,2,3,6,7,8-HxCDF	2.40E-10	0.00E+00	0.00E+00		2.40E-10
2,3,4,6,7,8-HxCDF	3.80E-10	0.00E+00	0.00E+00		3.80E-10
1,2,3,7,8,9-HxCDF	1.68E-09	0.00E+00	0.00E+00		1.68E-09
Total HxCDF	2.80E-09	1.47E-11	0.00E+00		2.81E-09
1,2,3,4,6,7,8-HpCDF	1.30E-09	0.00E+00	0.00E+00		1.30E-09
1,2,3,4,7,8,9-HpCDF	5.40E-10	0.00E+00	0.00E+00		5.40E-10
Total HpCDF	2.00E-09	7.12E-11	0.00E+00		2.07E-09
Octa CDF	9.60E-10	8.81E-11	0.00E+00		1.05E-09
Total PCDF	8.00E-09	2.28E-10	0.00E+00		8.23E-09
Total PCDD/PCDF <sup>a</sup>	2.40E-08	1.69E-08	0.00E+00		2.57E-08
Non-PAN NAPA					
Acetaldehyde <sup>a</sup>	2.60E-01	0.00E+00	5.03E-04		2.61E-01
Acrolein <sup>a</sup>	5.20E-03	0.00E+00	1.57E-04		5.36E-03
Benzene <sup>a</sup>	7.80E-02	2.07E-08	1.55E-02	1.21E-03	9.35E-02
1,3-Butadiene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethylbenzene <sup>a</sup>	4.80E-02	0.00E+00	0.00E+00	7.14E-03	4.80E-02
Formaldehyde <sup>a</sup>	6.20E-01	7.39E-06	1.57E-03	1.75E-03	6.22E-01
Hexane <sup>a</sup>	1.84E-01	1.77E-03	0.00E+00	1.86E-01	1.86E-01
Isocane <sup>a</sup>	8.00E-03	0.00E+00	0.00E+00	2.25E-05	8.00E-03
Methyl Ethyl Ketone <sup>a</sup>	4.00E-03	0.00E+00	0.00E+00	1.39E-03	4.00E-03
Pentane <sup>a</sup>	0.00E+00	2.56E-03	0.00E+00		2.56E-03
Propionaldehyde <sup>a</sup>	2.60E-02	0.00E+00	0.00E+00		2.60E-02
Quinone <sup>a</sup>	3.20E-02	0.00E+00	0.00E+00		3.20E-02
Methyl chloroform <sup>a</sup>	9.60E-03	9.00E+00	0.00E+00	0.00E+00	9.60E-03
Toluene <sup>a</sup>	5.80E-01	3.35E-08	5.81E-03	3.28E-03	5.86E-01
Xylene <sup>a</sup>	4.00E-02	0.00E+00	3.85E-03	1.22E-02	4.39E-02
TOTAL PAN NAPA (T/yr) =					1.78E-01
TOTAL Federal NAPA (T/yr) =					2.18E+00
TOTAL Idaho TAPs (T/yr) =					2.37E+00
PAN NAPA					
2-Methylnaphthalene	3.40E-02	2.37E-08	0.00E+00	4.30E-03	3.40E-02
3-Methylnaphthalene <sup>a</sup>	0.00E+00	1.77E-09	0.00E+00		1.77E-09
Acenaphthene	2.80E-04	3.69E-08	9.34E-06	4.16E-04	3.77E-04
Acenaphthylene	4.40E-03	1.47E-08	1.84E-04	2.62E-06	4.59E-03
Anthracene	6.20E-04	1.32E-08	2.49E-06	1.14E-04	6.46E-04
Benzofluoranthene <sup>a</sup>	4.20E-05	1.77E-09	1.24E-06	4.14E-06	5.44E-05
Benzolopyrene <sup>a</sup>	1.98E-06	1.18E-06	5.13E-06	1.57E-06	7.09E-06
Benzobifluoranthene <sup>a</sup>	2.00E-05	7.34E-07	2.22E-06	5.18E-06	4.29E-05
Benzolopyrene	2.20E-05	0.00E+00	0.00E+00	1.01E-06	2.20E-05
Benzofluoranthene	8.00E-06	1.18E-09	1.11E-06	1.30E-06	1.81E-05
Benzobifluoranthene <sup>a</sup>	8.20E-06	1.77E-09	4.35E-06	1.50E-06	1.26E-05
Chrysene <sup>a</sup>	3.80E-05	1.77E-09	3.05E-06	1.77E-04	6.65E-05
Dibenzofluoranthene <sup>a</sup>	0.00E+00	1.18E-09	6.80E-06	2.52E-07	6.91E-06
Dichlorobenzene	0.00E+00	1.18E-06	0.00E+00		1.18E-06
Fluoranthene	1.22E-04	3.23E-07	8.04E-06	1.10E-04	2.03E-04
Fluorene	2.20E-03	2.35E-07	2.56E-04	1.04E-03	2.46E-03
Indeno(1,2,3-cd)pyrene <sup>a</sup>	1.40E-06	1.77E-09	8.26E-08	3.20E-07	9.66E-06
Naphthalene <sup>a</sup>	1.30E-01	1.25E-04	2.59E-03	1.78E-03	1.30E-01
Pyrene	1.78E-06	0.00E+00	0.00E+00	3.02E-05	1.78E-06
Phenanthrene	4.60E-03	3.60E-06	6.14E-04	1.47E-03	5.45E-03
Pyrene	6.00E-04	2.35E-07	7.40E-06	3.26E-04	6.74E-04
Non-HAP Organic Compounds					
Acetone <sup>a</sup>	1.66E-01	0.00E+00	0.00E+00	1.73E-03	1.66E-01
Benzaldehyde	2.20E-02	0.00E+00	0.00E+00		2.20E-02
Butane	1.34E-01	2.07E-03	0.00E+00		1.36E-01
Butyraldehyde	3.20E-02	0.00E+00	0.00E+00		3.20E-02
Crotonaldehyde <sup>a</sup>	1.72E-02	0.00E+00	0.00E+00		1.72E-02
Ethylene	1.40E+00	0.00E+00	0.00E+00	3.27E-02	1.40E+00
Heptane	1.88E+00	0.00E+00	0.00E+00		1.88E+00
Hexane <sup>a</sup>	2.20E-02	0.00E+00	0.00E+00		2.20E-02
Isobutyraldehyde	6.40E-03	0.00E+00	0.00E+00		6.40E-03
2-Methyl-1-pentene	8.00E-01	0.00E+00	0.00E+00		8.00E-01
2-Methyl-2-butene	1.18E-01	0.00E+00	0.00E+00		1.18E-01
3-Methylpentane	3.80E-02	0.00E+00	0.00E+00		3.80E-02
1-Pentene	4.40E-01	0.00E+00	0.00E+00		4.40E-01
n-Pentane <sup>a</sup>	4.20E-02	0.00E+00	0.00E+00		4.20E-02
Valeraldehyde <sup>a</sup>	1.34E-02	0.00E+00	0.00E+00		1.34E-02
Metals					
Antimony <sup>a</sup>	3.60E-06	3.65E-03	0.00E+00		7.45E-06
Arsenic <sup>a</sup>	1.12E-04	9.69E-08	0.00E+00		1.22E-04
Berium <sup>a</sup>	1.16E-03	1.89E-06	0.00E+00		1.16E-03
Beryllium <sup>a</sup>	0.00E+00	2.04E-07	0.00E+00		2.04E-07
Cadmium <sup>a</sup>	8.20E-06	2.92E-06	0.00E+00		8.49E-06
Chromium <sup>a</sup>	1.10E-03	8.20E-08	0.00E+00		1.11E-03
Cobalt <sup>a</sup>	5.20E-06	4.42E-06	0.00E+00		4.94E-06
Copper <sup>a</sup>	6.20E-04	1.29E-06	0.00E+00		6.33E-04
Hexavalent Chromium <sup>a</sup>	9.00E-06	1.82E-08	0.00E+00		9.18E-06
Manganese <sup>a</sup>	1.54E-03	2.20E-06	0.00E+00		1.56E-03
Mercury <sup>a</sup>	5.20E-04	8.29E-07	0.00E+00		5.21E-04
Molybdenum <sup>a</sup>	0.00E+00	5.78E-08	0.00E+00		5.78E-08
Nickel <sup>a</sup>	1.26E-02	6.20E-04	0.00E+00		1.32E-02
Phosphorus <sup>a</sup>	5.60E-03	6.94E-08	0.00E+00		5.67E-03
Silver <sup>a</sup>	9.60E-06	0.00E+00	0.00E+00		9.60E-06
Selenium <sup>a</sup>	7.00E-06	5.01E-06	0.00E+00		7.50E-06
Thallium <sup>a</sup>	8.20E-07	0.00E+00	0.00E+00		8.20E-07
Vanadium <sup>a</sup>	0.00E+00	2.33E-04	0.00E+00		2.33E-04
Zinc <sup>a</sup>	1.22E-02	2.14E-04	0.00E+00		1.24E-02

a) IDAPA Toxic Air Pollutant

Facility:

Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900

# CURRENT PTC ESTIMATES

4/20/2006 9:46

Permit/Facility ID: P-056216 777-00084

## EMISSION INVENTORY

TONS PER YEAR

Page 2 of 2

age Max Emissions of Any Pollutant from Drum Mix HMA Plant: Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Storage

A. Drum Mix Plant: 586 Tons/hour 727 Hours/year 484,888 Tons/year HMA throughput 24 hrs/day  
 Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Used Oil Natural Gas LPG/Propane  
 B. Tank Heater: 2,1168 MMBtu Rated 561 Hours/year 24 hrs/day  
 Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Natural Gas  
 C. Generator: 54.81 gal/hour 5314 Hours/year #2 Fuel Oil Generator=600hp 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
non-PAH HAPs					
Bromomethane <sup>a</sup>				1.21E-04	0.00E+00
2-Butanone (see Methyl Ethyl Ketone)					0.00E+00
Carbon disulfide <sup>a</sup>				2.41E-04	0.00E+00
Chloroethane (Ethyl chloride <sup>a</sup> )				3.50E-05	0.00E+00
Chloromethane (Methyl chloride <sup>a</sup> )				3.16E-04	0.00E+00
Cumene				9.15E-04	0.00E+00
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane <sup>a</sup> )				2.25E-05	0.00E+00
MTBE				0.00E+00	0.00E+00
Styrene <sup>a</sup>				1.06E-04	0.00E+00
Tetrachloroethene (Tetrachloroethylene <sup>a</sup> )				6.40E-05	0.00E+00
1,1,1-Trichloroethane (Methyl chloroform)				0.00E+00	0.00E+00
Trichloroethene (Trichloroethylene <sup>a</sup> )				0.00E+00	0.00E+00
Trichlorofluoromethane				1.06E-05	0.00E+00
m,p-Xylene <sup>a</sup>				5.07E-03	0.00E+00
o-Xylene <sup>a</sup>				7.13E-03	0.00E+00
Phenol <sup>a</sup>				8.05E-04	0.00E+00
Non-HAP Organic Compounds					
Methane				2.70E-01	0.00E+00

e) IDAPA Toxic Air Pollutant

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
4/20/2008 10:04 Permit/Facility ID: P-050216 777-00084

## CURRENT PTC ESTIMATES

### TAPs EL Screen - ALL SOURCES

588 pollutants are shown in boldface Page 1 of 2

Max Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo Filling, Storage  
A. Drum Mix Plant: 588 Tons/year 717 Hourly/year 400,000 Tons/year HMA throughput  
Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet

B. Tank Heater: 2.1168 MMbtu Rated 861 Hourly/year  
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet  
C. Generator: 64.81 gal/hour 6,314 Hourly/year  
D. Include all emissions from Load-out/Silo Filling? Yes  
Short Term Source Factor 686 ELs? 1  
Small or Large Generator using Diesel Fuel?

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment <sup>b</sup> (lb/hr)	TAPs Emission Exceeds EL Increment?	Modeled? Meets AAC or AACC?	Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment <sup>b</sup> (lb/hr)	TAPs Emission Exceeds EL Increment?	Modeled? Meets AAC or AACC?
HCl <sup>a</sup>	0.12	0.05	Exceeds	Yes, Meets	PAH TAPs				
Dioxins <sup>a</sup>		Total Equivalent Factor <sup>c</sup>	Adjusted Emission Rate (lb/hr)		2-Methylnaphthalene	1.05E-01			
2,3,7,8-TCDD	1.19E-10	1.0	1.19E-10	see TEQ	3-Methylnaphthalene <sup>d</sup>	3.75E-09	2.50E-09	No	NO, not new
Total TCDD	5.12E-10	n/a			Acenaphthene	1.98E-09			
1,2,3,7,8-PeCDD	1.71E-10	0.5	8.53E-11	see TEQ	Acenaphthylene	1.22E-02			
Total PeCDD	1.21E-09	n/a			Anthracene	2.03E-03			
1,2,3,4,7,8-HxCDD	2.42E-10	0.1	2.42E-11	see TEQ	Benzo(a)anthracene	2.34E-04			
1,2,3,6,7,8-HxCDD	7.15E-10	0.1	7.15E-11	see TEQ	Benzo(a)pyrene	1.16E-05	2.00E-05	Exceeds	see PQM
1,2,3,7,8,9-HxCDD	5.51E-10	0.1	5.51E-11	see TEQ	Benzo(b)fluoranthene	7.91E-05			
Total HxCDD	8.60E-09	n/a			Benzo(e)pyrene	8.84E-05			
1,2,3,4,6,7,8-HpCDD	2.87E-09	0.01	2.87E-11	see TEQ	Benzo(g,h,i)perylene	2.97E-05			
Total HpCDD	1.05E-09	n/a			Benzo(k)fluoranthene	2.85E-05			
Octa CDD	1.62E-08	n/a			Chrysene	8.97E-04			
Total CDD <sup>a</sup>	4.66E-08	n/a			Dibenz(a,h)anthracene	3.29E-09			
Furans <sup>a</sup>					Dichlorobenzene	2.48E-08			
2,3,7,8-TCDF	5.34E-10	0.1	5.34E-11	see TEQ	Fluoranthene	6.70E-04			
Total TCDF	2.09E-09	n/a			Fluorene	9.00E-03			
1,2,3,7,8-PeCDF	2.37E-09	0.05	1.18E-10	see TEQ	Indeno(1,2,3-cd)pyrene	7.84E-08			
2,3,4,7,8-PeCDF	4.62E-10	0.5	2.31E-10	see TEQ	Naphthalene <sup>d</sup>	3.63E-01	3.33	No	NO, not new
Total PeCDF	4.62E-09	n/a			Phenanthrene	8.80E-05			
1,2,3,4,7,8-HxCDF	2.20E-09	0.1	2.20E-10	see TEQ	Pyrene	1.71E-02			
1,2,3,6,7,8-HxCDF	6.80E-10	0.1	6.80E-11	see TEQ	Polycyclic Organic Matter <sup>d,e</sup>	6.81E-04	2.00E-05	Exceeds	NO, not new
2,3,4,6,7,8-HxCDF	1.05E-09	0.1	1.05E-10	see TEQ	Non-TAP Organic Compounds				
1,2,3,7,8,9-HxCDF	4.82E-09	0.1	4.82E-10	see TEQ	Acetone <sup>a</sup>	4.81E-01	119	No	No
Total HxCDF	7.19E-09	n/a			Benzaldehyde	6.05E-02			No
1,2,3,4,6,7,8-HpCDF	3.58E-09	0.01	3.58E-11	see TEQ	Butane	3.75E-01			No
1,2,3,7,8,9-HpCDF	1.49E-09	0.01	1.49E-11	see TEQ	Butyraldehyde	8.80E-02			No
Total HpCDF	5.06E-09	n/a			Crystalline Silica <sup>a</sup>	4.75E-02	0.38	No	No
Octa CDF	2.83E-08	n/a			Ethylene	3.84E+00			No
Total PCDF <sup>a</sup>	2.25E-08	n/a			Heptane	5.17E+00	109	No	NO, not new
Total PCDD/PCDF <sup>a</sup>	6.95E-08	n/a			Hexanal	6.05E-02			No
TOXIC EQUIVALENT (TEQ)		Adjusted lb/hr	TAPs EL for 2,3,7,8 TCDD	Exceeds TAPs EL?	Isovaleraldehyde	1.78E-02			No
Dioxin/Furan <sup>a</sup>	1.60E-09	1.50E-10	Exceeds	NO, not new	2-Methyl-1-pentene	2.20E+00			No
Non-PAH HAPs					2-Methyl-2-butene	3.19E-01			No
Acetaldehyde <sup>a</sup>	7.15E-01	3.00E-03	Exceeds	Yes, Meets	3-Methylpentene	1.05E-01			No
Acrolein <sup>a</sup>	1.44E-02	0.017	No	No	1-Pentene	1.21E+00			NO, not new
Benzidine <sup>a</sup>	2.24E-01	8.00E-04	Exceeds	NO, not new	n-Pentane <sup>a</sup>	1.16E-01	118	No	NO, not new
1,3-Butadiene <sup>a</sup>					Valeraldehyde (n-Valeraldehyde) <sup>a</sup>	3.69E-02	11.7	No	No
Ethylbenzene <sup>a</sup>	1.52E-01	29	No	NO, not new	Metals				
Formaldehyde <sup>a</sup>	1.78E+00	5.10E-04	Exceeds	NO, not new	Antimony <sup>a</sup>	1.80E-04	0.033	No	NO, not new
Hexane <sup>a</sup>	5.10E-01	12	No	NO, not new	Arsenic <sup>a</sup>	3.28E-04	1.60E-06	Exceeds	NO, not new
Isopentane	2.21E-02				Barium <sup>a</sup>	9.23E-03	0.033	No	NO, not new
Methyl Ethyl Ketone <sup>a</sup>	1.47E-02	39.3	No	No	Beryllium <sup>a</sup>	4.28E-07	2.80E-05	No	NO, not new
Perthane <sup>a</sup>	5.39E-03	118	No	NO, not new	Cadmium <sup>a</sup>	2.32E-04	3.70E-06	Exceeds	NO, not new
Propionaldehyde <sup>a</sup>	7.15E-02	0.0287	Exceeds	Yes, Meets	Chromium <sup>a</sup>	3.04E-03	0.033	No	NO, not new
Quinone <sup>a</sup>	8.80E-02	0.027	Exceeds	Yes, Meets	Cobalt <sup>a</sup>	1.07E-04	0.0033	No	NO, not new
Methyl chloroform <sup>a</sup>	2.84E-02	127	No	NO, not new	Copper <sup>a</sup>	1.73E-03	0.013	No	NO, not new
Toluene <sup>a</sup>	1.81E+00	25	No	NO, not new	Hexavalent Chromium <sup>a</sup>	2.51E-04	5.80E-07	Exceeds	NO, not new
Xylene <sup>a</sup>	1.45E-01	29	No	NO, not new	Manganese <sup>a</sup>	4.28E-03	0.087	No	NO, not new
TOTAL PAH HAPs (lb/hr) =		5.98E+00			Mercury <sup>a</sup>	1.43E-03	0.003	No	NO, not new
TOTAL Federal HAPs (lb/hr) =		8.99E+00			Molybdenum <sup>a</sup>	1.21E-05	0.333	No	NO, not new
TOTAL State TAPs (lb/hr) =		6.31E+00			Nickel <sup>a</sup>	3.00E-02	2.70E-05	Exceeds	NO, not new

- a) Reserved.  
b) Toxic Air Pollutants, IDAPA 58.01.01.585 and .586, levels in effect as of January 27, 2008.  
c) Interim Procedure for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzodioxins and Dibenzofurans (CDDs and CDFs), 1988 update, EPA/625/3-88/016, March 1988 (Source: Mike Dubois, IDEQ State Office, April 2008)  
n/a = not available. IDAPA 58.01.01.585, TAPs Carcinogenic Inhibitors: Total of adjusted emission rates are treated as a single TAP (2,3,7,8 TCDD)  
d) IDAPA 58.01.01.588, Polycyclic Organic Matter. Emissions of PAHs shown in bold shall be considered together as one TAP equivalent in potency to benzo(a)pyrene.  
e) IDAPA Toxic Air Pollutant, 58.01.01.585 or .586

DEQ HMA Drum Mix Fabric Filter Toolt\_B6&7 FACWIDE TAPs & TAPs ELs\_Version D\_3/23/2008

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 4/20/2008 10:54 Permit/Facility ID: P-060215 777-00884

**CURRENT PTC ESTIMATES**  
**TAPs EL Screen - ALL SOURCES**

Page 2 of 2

Maximum Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Storage

A. Drum Mix Plant: 668 Tons/year 727 Hours/year 400,000 Tons/year HMA throughput  
 Maximum emission for each pollutant from any fuel-burning option selected in "Facility Data" worksheet.  
 B. Tank Heater: 2.1188 MBtu/hr Rated 981 Hours/year D. Include all emissions from Load-out/Storage? Yes  
 Maximum emission for each pollutant for heater burning any fuel selected in "Facility Data" worksheet.  
 C. Generator: 54.81 gal/hr 0 Hours/year Small or Large Generator using Diesel Fuel

Pollutant	TOTAL of Max Emission Rates from A, B, C & D (lb/hr)	TAPs Screening Emission Limit (EL) Increment <sup>a</sup> (lb/hr)	TAPs Emissions Exceed EL Increment?	Modeled?
<b>non-PAH HAPs</b>				
Bromomethane (Methyl bromide) <sup>b</sup>	3.32E-04	1.27	No	
2-Butanone (eqs Methyl Ethyl Ketone)				
Carbon disulfide <sup>b</sup>	6.83E-04	2	No	
Chloroethane (Ethyl chloride) <sup>b</sup>	6.82E-05	178	No	
Chloromethane (Methyl chloride) <sup>b</sup>	6.89E-04	6.887	No	
Cumene <sup>b</sup>	2.82E-03	18.3	No	
n-Heptane <sup>b</sup> (see Hexane <sup>b</sup> )				
Methylene chloride (Dichloromethane) <sup>b</sup>	6.18E-06	1.80E-03	No	
MTBE	0.00E+00			
Styrene <sup>b</sup>	2.91E-04	6.67	No	
Tetrachloroethene (Tetrachloroethylene) <sup>b</sup>	1.78E-04	1.30E-02	No	
1,1,1-Trichloroethane (eqs Methyl chloroform)				
Trichloroethene (Trichloroethylene) <sup>b</sup>	0.00E+00	17.83	No	
Trichlorofluoromethane	2.97E-05			
m,p-Xylene <sup>b</sup> (added into Xylene)				
o-Xylene <sup>b</sup> (added into Xylene)				
Phenol <sup>b</sup>	2.21E-03	1.27	No	
<b>Non-HAP Organic Compounds</b>				
Methane	7.43E-01			

a) For HMA facilities subject to NSPS (40 CFR 60, Subpart I), PTE includes fugitive emissions of PM from load-out, silo filling & storage tank operations.  
 b) IDAPA Toxic Air Pollutant, 58.01 01.585 or .588

# CURRENT PTC-AIRS CLASSIFICATION-PTC-NO LIMITS, UNCONTROLLED

## DEQ Verification Worksheets: Hot Mix Asphalt (HMA) Drum Mix Facility Data

Facility ID/AIRS No.	777-00044	Spreadsheet Date	4/18/2008 18:18
Permit No.	P-060216	HMA Type: Drum Mix or Batch?	Drum Mix
		Include Silo Fill & Loadout Emissions?	Y
Facility Owner/Company Name:	Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900		
Address:	302 16th Street		
City, State, Zip:	Clarkston, WA 99583		
Facility Contact:	Josh Smith, Highway Division Manager		
Contact Number/ e-mail:	(509) 766-6661		
Is this HMA facility subject to NSPS? Yes=1, No=0	1	Commenced Operations in:	1993
Use Short Term Source Factor on 686 ELs? Y or N	N	Use STSF on 686 AACC? Y/N	N
Hot Mix Plant AP-42 Section 11.1)	Input (Bold Color) or Calculated Value (Black)	Fuel Type(s)	Fuel Type Toggle ("0" or "1")
Drum Dryer Make/Model	Cedarapids/PTD 400/97 MMBtu	#2 Fuel Oil	1
Rated heat input capacity, MMBtu/hr	97	Used Oil or RFO4 Oil	1
Drum Dryer Hourly Throughput, Tons/hr	550	Natural Gas	1
Hours of operation per day	24	LPG or Propane	1
Hours of operation per year (=Throughput Annual/Hourly)	8,760	Exit Gas Volume (scfm)	38,134
Max Throughput at Annual Hours, Tons/yr	4,816,000	Exit Gas Temperature (°F)	275
Max Throughput (Proposed Limit), T/yr	4,816,000	Stack Pressure (in Hg)	
Used Oil max sulfur content (Default is 0.5%)	0.76%	Stack Moisture Content, %	
Note: (106 Btu/MMBtu) x (97 MMBtu/hr)/(137,030 Btu/gal) = 708 gal/hr. But Annual Fuel contract = 330,000 gal/yr = 38 gal/hr on average. (Analysis is based on 708 gal/hr)			

Asphalt Tank Heater AP-42, Section 11.1 (oil or natural gas fuel), or Section 1.4 (natural gas fuel)			
Rated heat input capacity (MMBtu)	2,115	Fuel Type(s)	Fuel Toggle
Hours of operation per day	24	#2 Fuel Oil	1
Operation, days per year	366.00	Used Oil	0
Hours of operation per year	8,760	Natural Gas	1
Exit Flow (scfm) or Velocity (fps) FPs	14.7 fps	Indirect Heat or Power? Y or N	Y
Exhaust exit gas temperature (°F)	360		

Tank Heater Fuel Consumption		#2 Fuel Oil	Natural Gas	Note for Poe:  8760 hours per year
Heat Input Rating (MMBtu/hr)	2,115	2,115		
Fuel Heating Value, Btu/gal (oil) or Btu/scf (gas)	137,030	1,020		
Heating Value Correction for Natural Gas EFs, see Note	n/a	1,020		
Theoretical Max Fuel Use Rate gal/hr (oil) or scf/hr (gas)	15.43	2,014		
Max Operational Hours per Year (Proposed Limit)	8,760.0	8,760		
Note: AP-42 EFs for natural gas combustion (Tables 1.4-xx) are based on heat value of 1,020 Btu/scf. EFs for other fuel heating values must be multiplied by the ratio of the specified heating value to 1,020.				

Electrical Generator < 600 hp (447 kW) AP-42 Section 3.3 (diesel fueled)			
Generator Make/Model		Fuel Type(s)	Fuel Toggle
		#2 Fuel Oil (Diesel)	0
		Gasoline	0
EF OPTIONS:	Use EFs in lb/HP-hr	Use EFs in lb/MMBtu	0
1) Input Rated Capacity, kW		Max Fuel Use Rate, gal/hr	
Spreadsheet conversion from kW to hp:		Fuel Heating Value, Btu/gal	
or 2) Input Rated Capacity, hp		Calculated MMBtu/hr	
Max Operational Hours/Day		Max Operational Hours/Day	
Max Operational Hours per Year (Proposed Limit)		Max Operational Hours/Year	
Note: 1 hp = 0.7456999 kW			

Electrical Generator > 600 hp (447 kW) AP-42 Section 3.4 (diesel or dual fuel)			
Generator Make/Model	Caterpillar Model 3412	Fuel Type(s)	Fuel Toggle
	800 kW	#2 Fuel Oil (Diesel)	1
		Dual Fuel (diesel/natural gas)	0
FUEL OPTIONS:	#2 Fuel Oil (Diesel)	Natural Gas Fuel	
Max Sulfur weight percent (w/o)	0.5	Max Sulfur w/o	
Max Fuel Use Rate, gal/hr	54.81	Max Fuel Use Rate, scf/hr	
Fuel Heating Value, Btu/gal	137,030	Fuel Heating Value, Btu/scf	
Calculated MMBtu/hr	7.51	Calculated MMBtu/hr	
Max Operational Hours per Day	24	Max Operational Hours per Day	
Max Operational Hours per Year	8,760	Max Operational Hours per Year	

Note: AP-42 Table 3.4-1 EFs are based on dual fuel operation of 5% diesel and 95% natural gas.  
Note: AP-42 Tables 3.3-x, 3.4-x: avg diesel heating value is based on 19,300 Btu/lb with density equal 7.1 lb/gal => Btu/gal = 137,030

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
4/20/2008 10:00 Perm/Facility ID: P-050215 777-00084

# NO LIMITS, UNCONTROLLED

## EMISSION INVENTORY

Tons per Year

Page 1 of 2

Maximum Controlled Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Store  
A. Drum Mix Plant: 688 Tons/year 8,768 Hours/year 4,515,988 Tons/year HMA throughput  
Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Used Oil 24 hrs/day Natural Gas LPG/Propane  
B. Tank Heater: 2.1168 MMbtu/hr 8,768 Hours/year  
Maximum emission for each pollutant from heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 24 hrs/day Natural Gas  
C. Generator: 84.81 gal/hour 8768 Hours/year Generator=600hp  
Maximum emission for each pollutant from generator burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
PM (total)	87452.00	1.35E-01	3.29E+00	1.28E+00	87455.42
PM-10 (total)	15658.50	1.35E-01	1.63E+00	1.28E+00	15660.27
PM-2.5	6.99	0.00E+00	0.00E+00	1.28E+00	6.99
CO	313.17	7.83E-01	2.80E+01	3.25E+00	341.89
NOx	132.50	1.35E+00	1.05E+02	239.12	239.12
SO <sub>2</sub>	209.58	4.80E+00	1.68E+01		231.00
VOC	77.09	5.00E-02	2.88E+00	3.88E-01	80.10
Lead	3.61E-02	1.02E-04	0.00E+00		3.62E-02
HCl	5.08E-01	0.00E+00	0.00E+00		5.08E-01
<b>Oxides</b>					
2,3,7,8-TCDD	5.06E-10	0.00E+00	0.00E+00		5.06E-10
Total TCDD	2.24E-09	0.00E+00	0.00E+00		2.24E-09
1,2,3,7,8-PeCDD	7.47E-10	0.00E+00	0.00E+00		7.47E-10
Total PeCDD	5.30E-08	0.00E+00	0.00E+00		5.30E-08
1,2,3,4,7,8-HxCDD	1.01E-09	4.66E-11	0.00E+00		1.06E-09
1,2,3,6,7,8-HxCDD	3.13E-08	0.00E+00	0.00E+00		3.13E-08
1,2,3,7,8,9-HxCDD	2.96E-09	5.14E-11	0.00E+00		2.41E-08
Total HxCDD	2.89E-08	0.00E+00	0.00E+00		2.89E-08
1,2,3,4,6,7,8-HpCDD	1.16E-08	1.01E-08	0.00E+00		1.26E-08
Total HpCDD	4.58E-08	1.35E-09	0.00E+00		4.71E-08
Octa CDD	6.02E-08	1.08E-08	0.00E+00		7.10E-08
Total PCDD	1.90E-07	1.35E-08	0.00E+00		2.04E-07
<b>Furans</b>					
2,3,7,8-TCDF	2.34E-09	0.00E+00	0.00E+00		2.34E-09
Total TCDF	8.81E-08	2.23E-10	0.00E+00		9.14E-08
1,2,3,7,8-PeCDF	1.04E-08	0.00E+00	0.00E+00		1.04E-08
2,3,4,7,8-PeCDF	2.02E-09	0.00E+00	0.00E+00		2.02E-09
Total PeCDF	2.02E-07	3.24E-11	0.00E+00		2.02E-07
1,2,3,4,7,8-HxCDF	9.64E-09	0.00E+00	0.00E+00		9.64E-09
1,2,3,6,7,8-HxCDF	2.89E-09	0.00E+00	0.00E+00		2.89E-09
2,3,4,6,7,8-HxCDF	4.58E-09	0.00E+00	0.00E+00		4.58E-09
1,2,3,7,8,9-HxCDF	2.02E-08	0.00E+00	0.00E+00		2.02E-08
Total HxCDF	3.13E-08	1.35E-10	0.00E+00		3.15E-08
1,2,3,4,6,7,8-HpCDF	1.57E-08	0.00E+00	0.00E+00		1.57E-08
1,2,3,4,7,8,9-HpCDF	6.50E-09	0.00E+00	0.00E+00		6.50E-09
Total HpCDF	2.41E-08	6.58E-10	0.00E+00		2.47E-08
Octa CDF	1.18E-08	8.11E-10	0.00E+00		1.24E-08
Total PCDF	9.64E-08	2.10E-09	0.00E+00		9.85E-08
Total PCDD/PCDF	2.89E-07	1.55E-08	0.00E+00		3.05E-07
<b>Non-PAH HAPs</b>					
Acetaldehyde	3.13E+00	0.00E+00	8.29E-04		3.13E+00
Acrolein	6.28E-02	0.00E+00	2.59E-04		6.29E-02
Benzene	9.40E-01	1.91E-05	2.55E-02	1.46E-02	9.65E-01
1,3-Butadiene	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylbenzene	5.78E-01	0.00E+00	0.00E+00	8.60E-02	5.78E-01
Formaldehyde	7.47E+00	6.81E-04	2.80E-03	2.11E-01	7.47E+00
Hexane	2.22E+00	1.83E-02	0.00E+00		2.23E+00
Isocitane	9.64E-02	0.00E+00	0.00E+00	2.71E-04	9.64E-02
Methyl Ethyl Ketone	4.82E-02	0.00E+00	0.00E+00	1.64E-02	4.82E-02
Paraffins	0.00E+00	2.38E-02	0.00E+00		2.38E-02
Propionaldehyde	3.13E-01	0.00E+00	0.00E+00		3.13E-01
Quinone	3.85E-01	0.00E+00	0.00E+00		3.85E-01
Methyl chloroform	1.16E-01	0.00E+00	0.00E+00	0.00E+00	1.16E-01
Toluene	6.99E+00	3.09E-05	9.24E-03	3.92E-02	7.00E+00
Xylene	4.82E-01	0.00E+00	6.35E-03	1.47E-01	4.88E-01
TOTAL PAH HAPs (T/yr)					2.14E+08
TOTAL Federal HAPs (T/yr)					2.89E+01
TOTAL Net HAPs (T/yr)					2.82E+01

a) IDAPA Toxic Air Pollutant

Facility:

Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900

**NO LIMITS, UNCONTROLLED**

4/20/2006 10:00

Permit/Facility ID: P-050215 777-00084

**EMISSION INVENTORY**

TONS PER YEAR

Page 2 of 2

Page Max Emissions of Any Pollutant from Drum Mix HMA Plant: Fabric Filter, Tank Heater, Generator, Load-out/Storage/Asphalt Storage

A. Drum Mix Plant: 560 Tons/hour 6,700 Hours/year

4,515,566 Tons/year HMA throughput 24 hrs/day

Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected =

#2 Fuel Oil Used Oil Natural Gas LPG/Propane 24 hrs/day

B. Tank Heater: 2.1186 MMBtu Rated 6,700 Hours/year

24 hrs/day

Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected =

#2 Fuel Oil Natural Gas 24 hrs/day

C. Generator: 64.91 gal/hour 6,700 Hours/year

#2 Fuel Oil Generator-600hp 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Site Piling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
non-PAH HAPs <sup>a</sup>					
Bromomethane <sup>a</sup>				1.45E-03	0.00E+00
2-Butanone (see Methyl Ethyl Ketone)					0.00E+00
Carbon disulfide <sup>a</sup>				2.91E-03	0.00E+00
Chloroethane (Ethyl chloride) <sup>a</sup>				4.22E-04	0.00E+00
Chloromethane (Methyl chloride) <sup>a</sup>				3.81E-03	0.00E+00
Cumene				1.10E-02	0.00E+00
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane) <sup>a</sup>				2.71E-05	0.00E+00
MTBE				0.00E+00	0.00E+00
Styrene <sup>a</sup>				1.27E-03	0.00E+00
Tetrachloroethene (Tetrachloroethylene) <sup>a</sup>				7.71E-04	0.00E+00
1,1,1-Trichloroethane (Methyl chloroform) <sup>a</sup>				0.00E+00	0.00E+00
Trichloroethane (Trichloroethylene) <sup>a</sup>				0.00E+00	0.00E+00
Trichlorofluoromethane				1.30E-04	0.00E+00
m-p-Xylene <sup>a</sup>				6.11E-02	0.00E+00
o-Xylene <sup>a</sup>				8.59E-02	0.00E+00
Phenol <sup>a</sup>				6.69E-03	0.00E+00
Non-HAP Organic Compounds					
Methane				3.26E+00	0.00E+00

a) IDAPA Toxic Air Pollutant

# **EXISTING (MARCH 26, 1993) PERMIT NO. 777-00084 ESTIMATES**

<b>DEQ Verification Worksheets: Hot Mix Asphalt (HMA) Drum Mix Facility Data</b>			
Facility ID/AIRS No.	777-00084	Spreadsheet Date	4/18/2006 21:41
Permit No.	P-060216	HMA Type: Drum Mix or Batch ?	Drum Mix
		Include Silo Fill & Loadout Emissions	1
Facility Owner/Company Name:	Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900		
Address:	302 18th Street		
City, State, Zip:	Clarkston, WA 99803	<b>P777-00084</b>	
Facility Contact:	Josh Smith, Highway Division Manager	<b>ESTIMATES</b>	
Contact Number/ e-mail:	(509) 788-6661		
Is this HMA facility subject to NSPS? Yes=1, No=0	1	Commenced Operations in:	1993
Use Short Term Source Factor on 686 ELs? Y or N	N	Use STSF on 686 AACC? Y/N	N
Hot Mix Plant AP-42 Section 11.1)	Input (Bold Color) or Calculated Value (Black)	Fuel Type(s)	Fuel Type Toggle ("0" or "1")
Drum Dryer Make/Model	Cedarapids/PTD 400/87		
Rated heat input capacity, MMBtu/hr	97	#2 Fuel Oil	1
Drum Dryer Hourly Throughput, Tons/hr	660	Used Oil or RFO4 Oil	0
Hours of operation per day	24	Natural Gas	0
Hours of operation per year (=Throughput Annual/Hourly)	2,400	LPG or Propane	0
Max Throughput at Annual Hours, Tons/yr	1,320,000	Exit Gas Volume (scfm)	55,000
Max Throughput (Proposed Limit), T/yr	1,320,000	Exit Gas Temperature (°F)	250
Used Oil max sulfur content (Default is 0.5%)	0.55%	Stack Pressure (in Hg)	
		Stack Moisture Content, %	

Note: (106 Btu/MMBtu) x (97 MMBtu/hr)/(137,030 Btu/gal) = 708 gal/hr.  
 But Annual Fuel contract = 330,000 gal/yr = 136 gal/hr on average. (Analysis is based on 708 gal/hr)

<b>Asphalt Tank Heater AP-42, Section 11.1 (oil or natural gas fuel), or Section 1.4 (natural gas fuel)</b>			
Rated heat input capacity (MMBtu)		Fuel Type(s)	Fuel Toggle
Hours of operation per day		#2 Fuel Oil	0
Operation, days per year		Used Oil	0
Hours of operation per year		Natural Gas	0
Exit Flow (scfm) or Velocity (fps) FPS		Indirect Heat or Power? Y or N	Y
Exhaust exit gas temperature (°F)			

Tank Heater Fuel Consumption	#2 Fuel Oil	Natural Gas	Note for Poe: No change to tank heater proposed
Heat Input Rating (MMBtu/hr)			
Fuel Heating Value, Btu/gal (oil) or Btu/scf (gas)	137,030		
Heating Value Correction for Natural Gas EFs, see Note	n/a	1.029	
Theoretical Max Fuel Use Rate gal/hr [oil] or scf/hr (gas)			
Max Operational Hours per Year (Proposed Limit)	961.0	961	

Note: AP-42 EFs for natural gas combustion (Tables 1.4-xx) are based on heat value of 1,020 Btu/scf.  
 EFs for other fuel heating values must be multiplied by the ratio of the specified heating value to 1,020.

<b>Electrical Generator &lt; 600 hp (447 kW) AP-42 Section 3.3 (diesel fueled)</b>			
Generator Make/Model		Fuel Type(s)	Fuel Toggle
		#2 Fuel Oil (Diesel)	0
		Gasoline	0
EF OPTIONS: Use EFs in lb/hp-hr		Use EFs in lb/MMBtu	0
1) Input Rated Capacity, kW		Max Fuel Use Rate, gal/hr	
Spreadsheet conversion from kW to hp:		Fuel Heating Value, Btu/gal	
or 2) Input Rated Capacity, hp		Calculated MMBtu/hr	
Max Operational Hours/Day		Max Operational Hours/Day	
Max Operational Hours per Year (Proposed Limit)		Max Operational Hours/Year	

Note: 1 hp = 0.7456999 kW

<b>Electrical Generator &gt; 600 hp (447 kW) AP-42 Section 3.4 (diesel or dual fuel)</b>			
Generator Make/Model	UNKNOWN	Fuel Type(s)	Fuel Toggle
	600 kW	#2 Fuel Oil (Diesel)	1
		Dual Fuel (diesel/natural gas)	0
FUEL OPTIONS: #2 Fuel Oil (Diesel)		Natural Gas Fuel	
Max Sulfur weight percent (w/o)	0.5	Max Sulfur w/o	
Max Fuel Use Rate, gal/hr	41.10	Max Fuel Use Rate, scf/hr	
Fuel Heating Value, Btu/gal	137,030	Fuel Heating Value, Btu/scf	
Calculated MMBtu/hr	5.63	Calculated MMBtu/hr	
Max Operational Hours per Day	24	Max Operational Hours per Day	
Max Operational Hours per Year	6,314	Max Operational Hours per Year	

Note: AP-42 Table 3.4-1 EFs are based on dual fuel operation of 5% diesel and 95% natural gas.  
 Note: AP-42 Tables 3.3-x, 3.4-x: avg diesel heating value is based on 19,300 Btu/lb with density equal 7.1 lb/gal => Btu/gal = 137,030  
 GENERATOR HEAT INPUT: 600 kW x 1.341 hp/kW x 7,000 Btu/hp-hr x 1E-06 MMBtu/B = 5.6322 MMBtu/hr

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 4/20/2006 10:01 Permit/Facility ID: P-050215 777-00064

# 1993 PERMIT ESTIMATES

## EMISSION INVENTORY

(POUNDS PER HOUR)

Page 1 of 2

Maximum Controlled Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Blow/Asphalt Store  
 A. Drum Mix Plant: 660 Tons/hour 2,400 Hour/year 1,320,000 Tons/year HMA throughput 24 hrs/day  
 Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil  
 B. Tank Heater: MMBtu Ret. Hour/year 24 hrs/day  
 Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil  
 C. Generator: 41,10186 gal/hour 5314 Hour/year Generator-6000 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C Generator Max Emission Rate for Pollutant (lb/hr)	D Load-out, Site Filling, & Tank Storage Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PM (total)	19.15	0.00E+00	5.63E-01	2.87E-01	19.00
PM-10 (total)	12.85	0.00E+00	2.79E-01	2.87E-01	13.22
P.M.-2.5	1.80	0.00E+00	0.00E+00	2.87E-01	1.98
CO	71.50	0.00E+00	4.79E+00	7.42E-01	77.03
NOx	30.25	0.00E+00	1.80E+01		48.27
SO <sub>2</sub>	6.05	0.00E+00	2.84E+00		8.89
VOC	17.60	0.00E+00	5.07E-01	6.64E-02	18.20
Lead	8.25E-03	0.00E+00	0.00E+00		8.25E-03
HCl <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Dioxins <sup>a</sup>					
2,3,7,8-TCDF	1.18E-10	0.00E+00	0.00E+00		1.18E-10
Total TCDF	5.12E-10	0.00E+00	0.00E+00		5.12E-10
1,2,3,7,8-PeCDD	1.71E-10	0.00E+00	0.00E+00		1.71E-10
Total PeCDD	1.21E-08	0.00E+00	0.00E+00		1.21E-08
1,2,3,4,7,8-HxCDD	2.31E-10	0.00E+00	0.00E+00		2.31E-10
1,2,3,6,7,8-HxCDD	7.15E-10	0.00E+00	0.00E+00		7.15E-10
1,2,3,7,8,9-HxCDD	5.39E-10	0.00E+00	0.00E+00		5.39E-10
Total HxCDD	6.60E-09	0.00E+00	0.00E+00		6.60E-09
1,2,3,4,6,7,8-HpCDD	2.64E-09	0.00E+00	0.00E+00		2.64E-09
Total HpCDD	1.05E-08	0.00E+00	0.00E+00		1.05E-08
Octa CDD	1.38E-08	0.00E+00	0.00E+00		1.38E-08
Total PCDD <sup>a</sup>	4.35E-08	0.00E+00	0.00E+00		4.35E-08
Furans <sup>a</sup>					
2,3,7,8-TCDF	5.34E-10	0.00E+00	0.00E+00		5.34E-10
Total TCDF	2.04E-09	0.00E+00	0.00E+00		2.04E-09
1,2,3,7,8-PeCDF	2.37E-09	0.00E+00	0.00E+00		2.37E-09
1,2,3,4,7,8-PeCDF	4.62E-10	0.00E+00	0.00E+00		4.62E-10
Total PeCDF	4.62E-09	0.00E+00	0.00E+00		4.62E-09
1,2,3,4,7,8-HxCDF	2.20E-09	0.00E+00	0.00E+00		2.20E-09
1,2,3,6,7,8-HxCDF	6.60E-10	0.00E+00	0.00E+00		6.60E-10
1,2,3,7,8,9-HxCDF	1.05E-09	0.00E+00	0.00E+00		1.05E-09
1,2,3,4,6,7,8-HpCDF	4.62E-09	0.00E+00	0.00E+00		4.62E-09
Total HxCDF	7.15E-09	0.00E+00	0.00E+00		7.15E-09
1,2,3,4,6,7,8-HpCDF	3.58E-09	0.00E+00	0.00E+00		3.58E-09
1,2,3,4,7,8,9-HpCDF	1.49E-09	0.00E+00	0.00E+00		1.49E-09
Total HpCDF	5.06E-09	0.00E+00	0.00E+00		5.06E-09
Octa CDF	2.64E-09	0.00E+00	0.00E+00		2.64E-09
Total PCDF <sup>a</sup>	2.20E-08	0.00E+00	0.00E+00		2.20E-08
Total PCDD/PCDF <sup>a</sup>	6.60E-08	0.00E+00	0.00E+00		6.60E-08
Non-PAN HAPs					
Acetaldehyde <sup>a</sup>	0.00E+00	0.00E+00	1.42E-04		1.42E-04
Acrolein <sup>a</sup>	0.00E+00	0.00E+00	4.44E-03		4.44E-03
Benzene <sup>a</sup>	2.15E-01	0.00E+00	4.37E-03	3.33E-03	2.22E-01
1,3-Butadiene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylbenzene <sup>a</sup>	1.32E-01	0.00E+00	0.00E+00	1.96E-02	1.52E-01
Formaldehyde <sup>a</sup>	1.71E+00	0.00E+00	4.44E-04	4.63E-02	1.75E+00
Heptane <sup>a</sup>	5.08E-01	0.00E+00	0.00E+00		5.08E-01
Isopentane <sup>a</sup>	2.20E-02	0.00E+00	0.00E+00	8.20E-05	2.21E-02
Methyl Ethyl Ketone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00	3.73E-03	3.73E-03
Pentane <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Propionaldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Quinone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Methyl chloroform <sup>a</sup>	2.84E-02	0.00E+00	0.00E+00	0.00E+00	2.84E-02
Toluene <sup>a</sup>	1.80E+00	0.00E+00	1.58E-03	8.98E-03	1.81E+00
Xylene <sup>a</sup>	1.10E-01	0.00E+00	1.09E-03	3.38E-02	1.45E-01

a) IDAPA Toxic Air Pollutant

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C Generator Max Emission Rate for Pollutant (lb/hr)	D Load-out, Site Filling, & Tank Storage Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PAN HAPs					
2-Methylnaphthalene	9.36E-02	0.00E+00	0.00E+00	1.18E-02	1.09E-01
3-Methylnaphthalene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Acenaphthene	7.70E-04	0.00E+00	2.84E-05	1.14E-03	1.94E-03
Acenaphthylene	1.21E-02	0.00E+00	5.20E-05	7.21E-03	1.22E-02
Anthracene	1.71E-03	0.00E+00	6.93E-06	3.13E-04	2.02E-03
Benzo(a)anthracene <sup>a</sup>	1.18E-04	0.00E+00	3.50E-08	1.14E-04	2.33E-04
Benzo(a)pyrene <sup>a</sup>	6.39E-06	0.00E+00	1.45E-08	4.31E-08	1.12E-05
Benzo(b)fluoranthene <sup>a</sup>	5.50E-06	0.00E+00	6.25E-08	1.43E-08	7.55E-06
Benzo(e)pyrene	6.05E-06	0.00E+00	0.00E+00	2.79E-05	8.84E-06
Benzo(g,h)perylene	2.20E-06	0.00E+00	3.13E-08	3.58E-08	2.87E-06
Benzo(k)fluoranthene <sup>a</sup>	2.28E-06	0.00E+00	1.23E-08	4.13E-08	2.79E-06
Chrysene <sup>a</sup>	9.90E-05	0.00E+00	8.82E-08	4.88E-04	5.84E-04
Dibenz(a,h)anthracene <sup>a</sup>	0.00E+00	0.00E+00	1.95E-08	6.94E-07	2.64E-08
Dichlorobenzene	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Fluoranthene	3.38E-04	0.00E+00	2.27E-06	3.03E-04	6.81E-04
Fluorene	8.06E-03	0.00E+00	7.21E-06	2.86E-03	8.96E-03
Indeno(1,2,3-cd)pyrene <sup>a</sup>	3.85E-06	0.00E+00	2.33E-08	8.61E-07	7.08E-06
Naphthalene <sup>a</sup>	3.58E-01	0.00E+00	7.32E-04	4.89E-03	3.82E-01
Phenylene	4.84E-06	0.00E+00	0.00E+00	8.31E-03	8.80E-03
Phenanthrene	1.27E-02	0.00E+00	2.30E-04	4.03E-03	1.69E-02
Pyrene	1.65E-03	0.00E+00	2.09E-06	8.86E-04	2.57E-03
Non-HAP Organic Compounds					
Acetone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00	4.78E-03	4.78E-03
Benzaldehyde	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Butane	3.69E-01	0.00E+00	0.00E+00		3.69E-01
Butyraldehyde	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Crotonaldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylene	3.85E+00	0.00E+00	0.00E+00	9.00E-02	3.94E+00
Heptane	5.17E+00	0.00E+00	0.00E+00		5.17E+00
Hexane <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Isobutyraldehyde	0.00E+00	0.00E+00	0.00E+00		0.00E+00
2-Methyl-1-pentene	2.20E+00	0.00E+00	0.00E+00		2.20E+00
2-Methyl-2-butene	3.19E-01	0.00E+00	0.00E+00		3.19E-01
3-Methylpentane	1.05E-01	0.00E+00	0.00E+00		1.05E-01
1-Pentene	1.21E+00	0.00E+00	0.00E+00		1.21E+00
n-Pentane	1.18E-01	0.00E+00	0.00E+00		1.18E-01
Valeraldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Metals					
Antimony <sup>a</sup>	9.90E-05	0.00E+00	0.00E+00		9.90E-05
Arsenic <sup>a</sup>	3.08E-04	0.00E+00	0.00E+00		3.08E-04
Barium <sup>a</sup>	3.19E-03	0.00E+00	0.00E+00		3.19E-03
Beryllium <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Cadmium <sup>a</sup>	2.28E-04	0.00E+00	0.00E+00		2.28E-04
Chromium <sup>a</sup>	3.03E-03	0.00E+00	0.00E+00		3.03E-03
Cobalt <sup>a</sup>	1.43E-05	0.00E+00	0.00E+00		1.43E-05
Copper <sup>a</sup>	1.71E-03	0.00E+00	0.00E+00		1.71E-03
Hexavalent Chromium <sup>a</sup>	2.48E-04	0.00E+00	0.00E+00		2.48E-04
Manganese <sup>a</sup>	4.24E-03	0.00E+00	0.00E+00		4.24E-03
Mercury <sup>a</sup>	1.43E-03	0.00E+00	0.00E+00		1.43E-03
Molybdenum <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Nickel <sup>a</sup>	3.47E-02	0.00E+00	0.00E+00		3.47E-02
Phosphorus <sup>a</sup>	1.54E-02	0.00E+00	0.00E+00		1.54E-02
Silver <sup>a</sup>	2.64E-04	0.00E+00	0.00E+00		2.64E-04
Selenium <sup>a</sup>	1.93E-04	0.00E+00	0.00E+00		1.93E-04
Thallium <sup>a</sup>	2.28E-06	0.00E+00	0.00E+00		2.28E-06
Vanadium <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Zinc <sup>a</sup>	3.36E-02	0.00E+00	0.00E+00		3.36E-02

Facility:  
4/20/2006 10:01

Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
Permit/Facility ID: P-050215 777-00084

# 1993 PERMIT ESTIMATES

## EMISSION INVENTORY

POUNDS PER HOUR

Page 2 of 2

age Max Emissions of Any Pollutant from Drum Mix HMA Plant: Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Storage

A. Drum Mix Plant: 888 Tons/hour 2,400 Hours/year 1,320,000 Tons/year HMA throughput 24 hrs/day  
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil  
B. Tank Heater: MMBtu Rated Hours/year 24 hrs/day  
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Generator>600hp 24 hrs/day  
C. Generator: 41.1619485 gal/hour 8314 Hours/year

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C Generator Max Emission Rate for Pollutant (lb/hr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
non-PAH HAPs <sup>a</sup>					
Bromomethane <sup>a</sup>				3.32E-04	3.32E-04
2-Butanone (see Methyl Ethyl Ketone)					0.00E+00
Carbon disulfide <sup>a</sup>				6.63E-04	6.63E-04
Chloroethane (Ethyl chloride) <sup>a</sup>				9.63E-05	9.63E-05
Chloromethane (Methyl chloride) <sup>a</sup>				6.69E-04	6.69E-04
Cumene				2.52E-03	2.52E-03
n-Heptane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane) <sup>a</sup>				6.18E-06	6.18E-06
MTBE				0.00E+00	0.00E+00
Styrene <sup>a</sup>				2.91E-04	2.91E-04
Tetrachloroethene (Tetrachloroethylene) <sup>a</sup>				1.76E-04	1.76E-04
1,1,1-Trichloroethene (Methyl chloroform)				0.00E+00	0.00E+00
Trichloroethene (Trichloroethylene) <sup>a</sup>				0.00E+00	0.00E+00
Trichlorofluoromethane				2.97E-06	2.97E-06
m-p-Xylene <sup>a</sup>				1.40E-02	1.40E-02
o-Xylene <sup>a</sup>				1.98E-02	1.98E-02
Phenol <sup>a</sup>				2.21E-03	2.21E-03
Non-HAP Organic Compounds					
Methane				7.43E-01	7.43E-01

a) IDAPA Toxic Air Pollutant

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900

4/20/2006 10:01

Permit/Facility ID:

P-050215

777-00084

# 1993 PERMIT ESTIMATES

## EMISSION INVENTORY

Tons per Year

Page 1 of 2

Maximum Controlled Emissions of Any Pollutant from Drum Mix HMA Plant with Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Store

A. Drum Mix Plant: 560 Tons/hour 3,480 Hours/year 1,336,800 Tons/year HMA throughput

Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 24 hrs/day

B. Tank Heater: MMH/Rat Hours/year 24 hrs/day

Maximum emission for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected =

C. Generator: 41.18198 gal/hour 8314 Hours/year Generator=800W

#2 Fuel Oil 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
PM (total)	21.78	0.00E+00	1.50E+00	3.44E-01	23.28
PM-10 (total)	15.18	0.00E+00	7.42E-01	3.44E-01	15.92
P.M.-2.5	1.91	0.00E+00	0.00E+00	3.44E-01	1.91
CO	85.60	0.00E+00	1.27E+01	8.90E-01	96.92
NOx	36.30	0.00E+00	4.79E+01		84.19
SO <sub>2</sub>	7.26	0.00E+00	7.56E+00		14.82
VOC	21.12	0.00E+00	1.35E+00	1.08E-01	22.47
Lead	8.90E-03	0.00E+00	0.00E+00		8.90E-03
HCl	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Dioxins <sup>a</sup>					
2,3,7,8-TCDD	1.39E-10	0.00E+00	0.00E+00		1.39E-10
Total TCDD	8.14E-10	0.00E+00	0.00E+00		8.14E-10
1,2,3,7,8-PeCDD	2.05E-10	0.00E+00	0.00E+00		2.05E-10
Total PeCDD	1.45E-08	0.00E+00	0.00E+00		1.45E-08
1,2,3,4,7,8-HxCDD	2.77E-10	0.00E+00	0.00E+00		2.77E-10
1,2,3,6,7,8-HxCDD	8.58E-10	0.00E+00	0.00E+00		8.58E-10
1,2,3,7,8,9-HxCDD	8.47E-10	0.00E+00	0.00E+00		8.47E-10
Total HxCDD	7.92E-08	0.00E+00	0.00E+00		7.92E-08
1,2,3,4,6,7,8-HpCDD	3.17E-09	0.00E+00	0.00E+00		3.17E-09
Total HpCDD	1.25E-08	0.00E+00	0.00E+00		1.25E-08
Octa CDD	1.85E-08	0.00E+00	0.00E+00		1.85E-08
Total PCDD <sup>a</sup>	5.21E-08	0.00E+00	0.00E+00		5.21E-08
Furans <sup>a</sup>					
2,3,7,8-TCDF	6.40E-10	0.00E+00	0.00E+00		6.40E-10
Total TCDF	2.44E-09	0.00E+00	0.00E+00		2.44E-09
1,2,3,7,8-PeCDF	2.84E-09	0.00E+00	0.00E+00		2.84E-09
2,3,4,7,8-PeCDF	5.54E-10	0.00E+00	0.00E+00		5.54E-10
Total PeCDF	5.54E-08	0.00E+00	0.00E+00		5.54E-08
1,2,3,4,7,8-HxCDF	2.84E-09	0.00E+00	0.00E+00		2.84E-09
1,2,3,6,7,8-HxCDF	7.92E-10	0.00E+00	0.00E+00		7.92E-10
2,3,4,6,7,8-HxCDF	1.25E-09	0.00E+00	0.00E+00		1.25E-09
1,2,3,7,8,9-HxCDF	5.54E-09	0.00E+00	0.00E+00		5.54E-09
Total HxCDF	8.58E-08	0.00E+00	0.00E+00		8.58E-08
1,2,3,4,6,7,8-HpCDF	4.29E-09	0.00E+00	0.00E+00		4.29E-09
1,2,3,4,7,8,9-HpCDF	1.78E-08	0.00E+00	0.00E+00		1.78E-08
Total HpCDF	8.80E-08	0.00E+00	0.00E+00		8.80E-08
Octa CDF	3.17E-08	0.00E+00	0.00E+00		3.17E-08
Total PCDF <sup>a</sup>	2.84E-08	0.00E+00	0.00E+00		2.84E-08
Total PCDD/PCDF <sup>a</sup>	7.92E-08	0.00E+00	0.00E+00		7.92E-08
Non-PAH NAPA					
Acetaldehyde <sup>a</sup>	0.00E+00	0.00E+00	3.77E-04		3.77E-04
Acrolein <sup>a</sup>	0.00E+00	0.00E+00	1.18E-04		1.18E-04
Benzene <sup>a</sup>	2.57E-01	0.00E+00	1.18E-02	4.00E-03	2.68E-01
1,3-Butadiene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylbenzene <sup>a</sup>	1.58E-01	0.00E+00	0.00E+00	2.36E-02	1.58E-01
Formaldehyde <sup>a</sup>	2.05E+00	0.00E+00	1.18E-03	5.79E-02	2.08E+00
Hexane <sup>a</sup>	6.07E-01	0.00E+00	0.00E+00		6.07E-01
Isocane <sup>a</sup>	2.84E-02	0.00E+00	0.00E+00	7.43E-05	2.84E-02
Methyl Ethyl Ketone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00	4.48E-03	0.00E+00
Pentane <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Propionaldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Quinone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Methyl chloroform <sup>a</sup>	3.17E-02	0.00E+00	0.00E+00	0.00E+00	3.17E-02
Toluene <sup>a</sup>	1.91E+00	0.00E+00	4.21E-03	1.08E-02	1.92E+00
Xylene <sup>a</sup>	1.32E-01	0.00E+00	2.89E-03	4.03E-02	1.35E-01
TOTAL PAH NAPA (T/yr)					8.88E-01
TOTAL Federal NAPA (T/yr)					8.90E+00
TOTAL Idaho NAPA (T/yr)					8.88E+00

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
PAH NAPA					
2-Methylnaphthalene	1.12E-01	0.00E+00	0.00E+00	1.42E-02	1.12E-01
3-Methylchloranthrene <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Acenaphthene	9.24E-04	0.00E+00	7.00E-05	1.37E-03	9.84E-04
Acenaphthylene	1.45E-02	0.00E+00	1.38E-04	8.85E-05	1.47E-02
Anthracene	2.08E-03	0.00E+00	1.84E-05	3.75E-04	2.08E-03
Benzo(a)anthracene <sup>a</sup>	1.38E-04	0.00E+00	9.31E-05	1.37E-04	1.48E-04
Benzo(a)pyrene <sup>a</sup>	8.47E-05	0.00E+00	3.85E-05	5.18E-05	1.03E-05
Benzo(b)fluoranthene <sup>a</sup>	8.60E-05	0.00E+00	1.88E-05	1.71E-05	8.28E-05
Benzo(e)pyrene	7.28E-05	0.00E+00	0.00E+00	3.35E-05	7.28E-05
Benzo(g,h,i)perylene	2.84E-05	0.00E+00	8.32E-05	4.28E-05	3.47E-05
Benzo(k)fluoranthene <sup>a</sup>	2.71E-05	0.00E+00	3.28E-05	4.96E-05	3.03E-05
Chrysene <sup>a</sup>	1.19E-04	0.00E+00	2.29E-05	5.84E-04	1.42E-04
Dibenz(a,h)anthracene	0.00E+00	0.00E+00	5.18E-05	8.33E-07	8.18E-05
Dichlorobenzene	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Fluoranthene	4.03E-04	0.00E+00	6.03E-05	3.64E-04	4.63E-04
Fluorene	7.28E-03	0.00E+00	1.82E-04	3.43E-03	7.45E-03
Indeno(1,2,3-cd)pyrene <sup>a</sup>	4.62E-06	0.00E+00	8.20E-06	1.06E-06	1.08E-05
Naphthalene <sup>a</sup>	4.29E-01	0.00E+00	1.95E-03	5.89E-03	4.29E-01
Perylene	5.81E-06	0.00E+00	0.00E+00	9.98E-05	5.81E-06
Phenanthrene	1.52E-02	0.00E+00	6.11E-04	4.64E-03	1.58E-02
Pyrene	1.86E-03	0.00E+00	5.55E-05	1.07E-03	2.04E-03
Non-PAH Organic Compounds					
Acetone <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00	5.71E-03	0.00E+00
Benzaldehyde	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Butane	4.42E-01	0.00E+00	0.00E+00		4.42E-01
Butyraldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Crotonaldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Ethylene	4.62E+00	0.00E+00	0.00E+00	1.08E-01	4.62E+00
Heptane	6.20E+00	0.00E+00	0.00E+00		6.20E+00
Hexanal	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Isovaleraldehyde	0.00E+00	0.00E+00	0.00E+00		0.00E+00
2-Methyl-1-pentene	2.84E+00	0.00E+00	0.00E+00		2.84E+00
2-Methyl-2-butene	3.83E-01	0.00E+00	0.00E+00		3.83E-01
3-Methylpentene	1.25E-01	0.00E+00	0.00E+00		1.25E-01
n-Pentane	1.45E+00	0.00E+00	0.00E+00		1.45E+00
n-Pentane	1.39E-01	0.00E+00	0.00E+00		1.39E-01
Valeraldehyde <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Metals					
Antimony <sup>a</sup>	1.19E-04	0.00E+00	0.00E+00		1.19E-04
Arsenic <sup>a</sup>	3.70E-04	0.00E+00	0.00E+00		3.70E-04
Barium <sup>a</sup>	3.83E-03	0.00E+00	0.00E+00		3.83E-03
Beryllium <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Cadmium <sup>a</sup>	2.71E-04	0.00E+00	0.00E+00		2.71E-04
Chromium <sup>a</sup>	3.63E-03	0.00E+00	0.00E+00		3.63E-03
Cobalt <sup>a</sup>	1.72E-05	0.00E+00	0.00E+00		1.72E-05
Copper <sup>a</sup>	2.05E-03	0.00E+00	0.00E+00		2.05E-03
Hexavalent Chromium <sup>a</sup>	2.97E-04	0.00E+00	0.00E+00		2.97E-04
Manganese <sup>a</sup>	5.08E-03	0.00E+00	0.00E+00		5.08E-03
Mercury <sup>a</sup>	1.72E-03	0.00E+00	0.00E+00		1.72E-03
Molybdenum <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Nickel <sup>a</sup>	4.18E-02	0.00E+00	0.00E+00		4.18E-02
Phosphorus <sup>a</sup>	1.85E-02	0.00E+00	0.00E+00		1.85E-02
Silver <sup>a</sup>	3.17E-04	0.00E+00	0.00E+00		3.17E-04
Selenium <sup>a</sup>	2.31E-04	0.00E+00	0.00E+00		2.31E-04
Thallium <sup>a</sup>	2.71E-06	0.00E+00	0.00E+00		2.71E-06
Vanadium <sup>a</sup>	0.00E+00	0.00E+00	0.00E+00		0.00E+00
Zinc <sup>a</sup>	4.03E-02	0.00E+00	0.00E+00		4.03E-02

a) IDAPA Toxic Air Pollutant

Facility:  
4/20/2006 10:01

Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
Permit/Facility ID: P-050216 777-00084

# 1993 PERMIT ESTIMATES

## EMISSION INVENTORY

TONS PER YEAR

Page 2 of 2

Age Max Emissions of Any Pollutant from Drum Mix HMA Plant: Fabric Filter, Tank Heater, Generator, Load-out/Silo/Asphalt Storage

A. Drum Mix Plant: 688 Tons/hour 2,488 Hours/year 1,328,000 Tons/year HMA throughput 24 hrs/day  
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected =  
B. Tank Heater: 11480 Btu Rated Hours/year #2 Fuel Oil 24 hrs/day  
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected =  
C. Generator: 41.1818488 gal/hour 6314 Hours/year #2 Fuel Oil Generator=600hp 24 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives from D
non-PAH HAPs					
Bromomethane <sup>a</sup>				3.98E-04	0.00E+00
2-Butanone (see Methyl Ethyl Ketone)					0.00E+00
Carbon disulfide <sup>a</sup>				7.86E-04	0.00E+00
Chloroethane (Ethyl chloride) <sup>a</sup>				1.16E-04	0.00E+00
Chloromethane (Methyl chloride) <sup>a</sup>				1.04E-03	0.00E+00
Cumene				3.02E-03	0.00E+00
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane) <sup>a</sup>				7.41E-08	0.00E+00
MTBE				0.00E+00	0.00E+00
Styrene <sup>a</sup>				3.49E-04	0.00E+00
Tetrachloroethene (Tetrachloroethylene) <sup>a</sup>				2.11E-04	0.00E+00
1,1,1-Trichloroethane (Methyl chloroform)				0.00E+00	0.00E+00
Trichloroethene (Trichloroethylene) <sup>a</sup>				0.00E+00	0.00E+00
Trichlorofluoromethane				3.37E-05	0.00E+00
m-p-Xylene <sup>a</sup>				1.67E-02	0.00E+00
o-Xylene <sup>a</sup>				2.36E-02	0.00E+00
Phenol <sup>a</sup>				2.66E-03	0.00E+00
Non-HAP Organic Compounds					
Methane				8.92E-01	0.00E+00

e) IDAPA Toxic Air Pollutant

**APPENDIX B**

**AIR DISPERSION MODEL**

**P-050215**

### **Hot Mix Asphalt Plant - Screening Model Approach for Point Sources**

DEQ performed air pollutant dispersion modeling for the point sources using the SCREEN3 model. The modeling assumed flat terrain, no downwash, a receptor height of 1.0 meters (3.28 feet), and that ambient air was located immediately adjacent to the facility in a rural area. A full range of stability classes and wind speeds were evaluated within the model to identify the “worst case” meteorological conditions that result in the maximum concentrations at the receptor height.

For modeling purposes each emission source air pollutant emission rate was set at one pound per hour (0.126 grams per second [g/s]). Using this method, the SCREEN3 model identifies the highest estimated concentration in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) per pound per hour of emissions at any receptor. This value was used as the dispersion coefficient for that emissions point source (i.e., each stack). The SCREEN3 modeling results are provided in this Appendix.

### **Hot Mix Asphalt Plant - Screening Model Approach for Fugitive Sources**

Generic dispersion modeling for fugitive emissions from HMA silo filling and load-out was performed by DEQ using the ISCST3 model for a typical HMA facility.<sup>1</sup> Fugitive emissions from silo filling and load-out were modeled as volume sources. Generic dispersion factors for the dominant TAPs (those that typically are used to determine constraints on HMA facility operations) were developed from the maximum results from three model runs using five years of meteorological data from Boise and Pocatello, Idaho and Spokane, Washington. The ambient air boundary was taken to be 100 meters (328 feet) from the center of the volume sources (i.e., the center of the silo). These are shown in Table B.1.

**Table B.1 AMBIENT AIR QUALITY IMPACTS FROM TYPICAL HMA SILO AND LOAD-OUT**

Pollutant	Averaging Period	Ambient Air Quality Impact
PM <sub>10</sub>	24-hour	0.0739 $\mu\text{g}/\text{m}^3$ per Ton/hr of HMA
	Annual	1.747E-06 $\mu\text{g}/\text{m}^3$ per Ton/yr of HMA
CO	1-hour	1.895 $\mu\text{g}/\text{m}^3$ per Ton/hr of HMA
	8-hour	0.3973 $\mu\text{g}/\text{m}^3$ per Ton/hr of HMA
Benzene	Annual	9.267E-09 $\mu\text{g}/\text{m}^3$ per Ton/yr of HMA
Formaldehyde	Annual	1.227E-07 $\mu\text{g}/\text{m}^3$ per Ton/yr of HMA
Polycyclic Organic Matter	Annual	1.760E-06 $\mu\text{g}/\text{m}^3$ per Ton/yr of HMA

### **Ambient Air Quality Impacts - Approach**

The linear relationship between emission rate and ambient impact was used to predict the actual ambient impact by multiplying the dispersion coefficient for each point or fugitive emission source by the actual emission rates estimated in the emissions inventory.

The predicted ambient impact for each emission source was then multiplied by a persistence factor to convert the SCREEN3 one-hour concentration to the averaging periods of the ambient standards or TAP increments. The ambient impacts from the ISCST3 modeling for silo filling and load-out already reflect the appropriate averaging period, so were multiplied by the hourly or annual HMA throughput, as appropriate, to determine the ambient air quality impacts. The values for each averaging period were summed for all emissions sources along with background concentrations<sup>2</sup> for PM<sub>10</sub>, CO, NO<sub>2</sub> (presumed to apply to NO<sub>x</sub>), SO<sub>2</sub>, and lead to determine the total maximum ambient air quality impacts.

Ambient impacts were determined by modeling each point and fugitive emission source, as described above, to determine the maximum ambient impact from that source. Then the maximum ambient impacts from each emission source were added together to obtain the ambient impact. This methodology is conservative in part because it assumes that maximum impacts occur at the same ambient receptor.

<sup>1</sup> February 21, 2006, DEQ Internal Guidance Memorandum, Kevin Schilling, Stationary Source Modeling Coordinator to Air Program Permitting Staff, *Streamlined Dispersion Modeling for Hot Mix Asphalt Plants*.

<sup>2</sup> March 14, 2003, DEQ Internal Guidance Memorandum, Rick Hardy and Kevin Schilling to Mary Anderson, *Background Concentrations for Use in New Source Review Dispersion Modeling*.

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 4/18/2006 18:42 Permit/Facility ID: P-050215 777-00034

## Ambient Impacts - Screening Modeling

	940 Tons/hour	727 Hour/year
A. Drum Mixer Plant:		
Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet		
B. Tank Heater:	2,199 MMBtu Fired	861 Hour/year
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet		
C. Generator:	64,911 gal/year	5314 Hour/year

Release Parameters		Drum Dryer	Tank Heater	Generator	Load-out, Silos, Tank
Stack Height (ft)		23.6	16	13	1
Stack Diameter (ft)		3.67	0.8646	0.67	2
Stack Gas Temp (°F)		275	350	967	
Stack Gas Flow (acfm)		38,134	14.7 gpm	0.361	
Hours of Operation per Day		24	24	24	
Hours of Operation per Year		727	951	5,314	
SCREEN 3 Dispersion Coeff		3.943	115.7	13.24	

Q. Include all emissions from Load-out/Storage?	YES	1

Persistence Factors from Appendix A to the Idaho DEQ Air Quality Modeling Guide, rev 1, 12/31/02

**See STATEMENT OF BASIS TABLE 5.3**

Max ambient impacts from criteria pollutants are based on each unit Friday and Friday limits specified

<sup>5</sup> Non-Carcinogenic (505) Impacts converted to 24-hr average using persistence factor  $\times$  (hr/day)/24<sup>b</sup> Carcinogenic (586) impacts converted to annual average using persistence factor  $\times (T/yr)/T(1/yr \times 3750)$ 

Pollutant	Averaging Period	Persistence Factor, Simple Terrain <sup>1</sup> (unitless)	Drum Dryer			Yeast Heater			Generator			ISC3		
			SCREEN 3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Change in Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	SCREEN3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Change in Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	SCREEN3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Change in Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	Dispersion Coefficient (ug/m <sup>3</sup> /hr) or TYPH or TYP	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	
Polychlorinated Biphenyls (PCB)	24-hour Annual	0.4	3.942	9.85	15.69	115.7	13.24	-1.327	7.350E-02	0.00E+00	0.00E+00	0.00E+00		
	1-hour	0.08	3.942	9.85	0.26	115.7	13.24	-1.327	4.53E-01	1.747E-08	0.00E+00	0.00E+00		
CO	1-hour	1	3.942	56.8	158.4632	115.7	13.24	8.889	1.50E+01	1.985	0.00E+00	0.00E+00		
	8-hour	0.7	3.942	56.8	139.02564	115.7	13.24	8.889	9.00E+00	0.3973	0.00E+00	0.00E+00		
NO <sub>2</sub>	Annual	0.08	3.942	19.48	0.274	115.7	13.24	-8.889	-5.79E-01					
	3-hour	0.9	3.942	-32.48	-115.12611	115.7	13.24	2.889	2.48E+01					
SO <sub>2</sub>	24-hour Annual	0.4	3.942	-32.48	-51.15718	115.7	13.24	2.889	1.11E+01					
	8-hour	0.08	3.942	-32.48	-3.45	115.7	13.24	2.889	1.34E+00					
Ozone (as VOCs/TOCs)	8-hour	0.7	3.942	2.2	6.07048	115.7	13.24	-2.124	-1.97E+01					
	Quarterly	0.130	3.942		0.00E+00	115.7	13.24		0.00E+00					
Non-Carcinogenic (RAG)														
HCl <sup>3</sup>	24-hour	0.4	3.942	1.48E-01	1.82E-01	115.7	13.24		0.00E+00					
	24-hour	0.4	3.942		0.00E+00	115.7	13.24		0.00E+00					
	24-hour	0.4	3.942	7.48E-02	1.13E-01	115.7	13.24		0.00E+00					
	24-hour	0.4	3.942	8.89E-02	1.30E-01	115.7	13.24		0.00E+00					
Acetaldehyde <sup>4</sup>	Annual	0.125	3.942	7.16E-01	2.90E-02	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		4.72E-06					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		1.47E-03	8.287E-09		0.00E+00		
Dioxin/Furans (TEQ) <sup>1</sup>	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
Formaldehyde <sup>5</sup>	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
Polycyclic Organic Matter	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					
	Annual	0.125	3.942		0.00E+00	115.7	13.24		0.00E+00					

Facility: Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900 MODELING FOR CHANGE IN ALLOWABLE EMISSIONS  
 4/20/2006 10:04 Permit/Facility ID: P-050215 777-00084 (PTC EMISSION INVENTORY MINUS OLD PERMIT LIMITS)

Ambient Impacts - Facility Wide Full Impact Analysis (based on Screening Modeling, NO CO-LOCATION)  
 A. Drum Mix Plant: 550 Tons/year 727 Hour/year 400,000 Tons/year HMA throughput 24 hr/day  
 Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Used Oil LPG/Propane  
 B. Tank Heater: MMbtu Rated Hour/year  
 Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Natural Gas 24 hr/day  
 C. Generator: 54.81 gal/hour 8314 Hour/year #2 Fuel Oil (diesel) Natural Gas 24 hr/day  
 Memo, March 14, 2003, Rick Hardy & Kevin Schilling to Mary Anderson (all DEQ State Office Air Division), "Background Concentrations for Use in New Source Review Dispersion Modeling"

<sup>3</sup> Non-Carcinogenic (S86) impacts converted to 24-hr average using persistence factor x (hr/day)/24  
<sup>4</sup> Carcinogenic (S88) impacts converted to annual average for dryer using persistence factor x (T/hr)/(T/hr \* 8760)  
 and persistence factor x (hr/day)/8760 for heater and generator

Pollutant	Averaging Period	Drum Dryer	Tank Heater	Generator	Load-out/ Silos/Storage	HMA FACILITY TOTAL	Background Concentration (µg/m <sup>3</sup> ) <sup>4</sup>	Total Ambient Impact (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	Percent of NAAQS
PM-10	24-hour Annual	15.68 0.261	0.00 0.00	-7.03 -0.85	0.00 0.00	8.68 -0.59	73 25	82 25	150 50	54.4% 50.8%
CO	1-hour 8-hour Annual	198.5 139.6 0.274	0.00 0.00 0.00	12.98 9.08 -0.58	0.0 0.0 0.0	212.4 148.7 -0.30	3,812 2,300 17	3,812 2,448 17	40,000 10,000 100	9.5% 24.5% 16.7%
NO <sub>2</sub>	3-hour 24-hour Annual	-115.13 -51.17 -0.65	0.00 0.00 0.00	24.90 11.07 1.34		-90.2 -40.1 0.49	34 26 8	-58 -14 8	1,300 365 80	-4.3% -3.9% 10.6%
SO <sub>2</sub>	8-hour Quarterly	6.07 0.00E+00	0.00 0.00E+00	-19.69 0.00E+00		-13.61 0.00E+00	-14 0.03	-14 0.03	0.08 ppm 1.5	2.0%
Ozone (as VOCs/TOCs) Lead										
Non-Carcinogenic (S86)									AAC (mg/m <sup>3</sup> ) (24 hr avg)	Percent of AAC
HCl <sup>5</sup>	24-hour	1.82E-01	0.00E+00	0.00E+00		1.82E-01		1.82E-01	0.375	0.048%
Phosphorus <sup>6</sup>	24-hour	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	0.005	0.000%
Propionaldehyde <sup>7</sup>	24-hour	1.13E-01	0.00E+00	0.00E+00		1.13E-01		1.13E-01	0.0215	0.534%
Quinone <sup>8</sup>	24-hour	1.39E-01	0.00E+00	0.00E+00		1.39E-01		1.39E-01	0.020	0.684%
Carcinogenic (S88)							T-RATIO Factor		AACC (µg/m <sup>3</sup> ) (Annual Avg x T- Ratio Factor)	Percent of AACC
Acetaldehyde <sup>9</sup>	Annual	2.93E-02	0.00E+00	4.72E-05	0.00E+00	2.93E-02		1	4.50E-01	6.5%
Arsenic <sup>10</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		2.93E-02	2.3E-04	0.0%
Benzene <sup>11</sup>	Annual	0.00E+00	0.00E+00	1.47E-03		1.47E-03		0.00E+00	1.2E-01	1.5%
Cadmium <sup>12</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	5.6E-04	0.0%
Dibenzofurans (TEQ) <sup>13</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	1.50E-10	0.0%
Hexavalent Chromium <sup>14</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	6.3E-05	0.0%
Formaldehyde <sup>15</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	7.7E-02	0.0%
Nickel <sup>16</sup>	Annual	0.00E+00	0.00E+00	0.00E+00		0.00E+00		0.00E+00	4.2E-03	0.0%
PolycyclicOrganic Matter <sup>17</sup>	Annual	0.00E+00		8.49E-06		8.49E-06		8.49E-06	3.0E-04	2.8%

Pos Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
 Facility: Permits/Facility ID: P-060215 777-00084  
 4/18/2006 20:02

## Ambient Impacts - Screening Modeling

	990 Tons/year	737 Hours/year
<b>A. Drum like Plant:</b>		
Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet		
<b>B. Tank Heater:</b>		
2,119 MMBtu Rated		961 Hours/year
Maximum emission for each pollutant from any fuel selected on "Facility Data" worksheet		
<b>C. Generator:</b>		
\$4.51 c/kwhr		5314 Hours/year

Release Parameters		Drum Dryer	Tank Header	Generator	Load-out, Silo, Tank
Stack Height (ft)		23.8	18	13	
Stack Diameter (ft)		3.67	6.8846	6.57	
Stack Gas Temp (°F)		275	350	967	
Stack Gas Flow (acfm)		38,134	14.7 fpm	6,291	
Hours of Operation per Day		24	24	24	
Hours of Operation per Year		727	851	5,314	
SCREEN 3 Dispersion Coeff		3.943	118.7	13.24	

**D. Include all emissions from Load-out/Unloading?** YES

ce Factors from Appendix A to the Idaho DEQ Air Quality Modeling Guide, rev 1, 12/31/02

Max Emission Rates are from worksheet: B4.5 EmissionInventory.bmr

ation: Diisocyanate TEQ from all point sources treated as being emitted from the drum dryer.

ation: POMS from all point sources treated as being omitted from the drum driver.

ient incomes from criteria pollutants are based on each unit trackway and trackway length specified

**Protease (545)** Insects converted to 24-h survival when persistence factor is 0.00000/24

serinic (506) Impacts converted to annual average using persistence factor  $\times (T_{yr}/T_{hr} \times 8760)$

Pollutant	Averaging Period	Persistence Factor, Simple Terrain <sup>1</sup> (unitless)	Drum Dwyer			Tank Header			Generator			Load-out, Site & Tank Storage		
			SCREEN 3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Max Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	SCREEN3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	SCREEN3 Dispersion Coefficient (ug/m <sup>3</sup> /hr)	Estimated Emission Rate <sup>2</sup> (lb/hr)	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	ISCT's Dispersion Coefficient (ug/m <sup>3</sup> /hr) or TYPH or TYP	Maximum Predicted Ambient Impact (ug/m <sup>3</sup> )	
PM-10	24-hour Annual	0.4	3.942	12.85	19.95	115.7	3.09E-02	1.43E+00	13.24	3.73E-01	1.97E+00	7.360E-02	550	4.00E+01
	1-hour	0.08	3.942	12.85	0.33	115.7	3.09E-02	3.10E-02	13.24	3.73E-01	2.39E-01	1.747E-08	400,000	6.99E-01
	8-hour	0.7	3.942	71.5	261.853	115.7	1.74E-01	2.02E+01	13.24	6.39E+00	8.45E+01	1.095	550	1.04E+03
	Annual	0.08	3.942	30.25	187.2971	115.7	1.74E-01	1.41E+01	13.24	6.39E+00	5.93E+01	0.3973	550	2.19E+02
NO <sub>2</sub>	24-hour Annual	0.4	3.942	47.85	169.76223	115.7	1.10E+00	1.14E+02	13.24	2.40E+01	1.54E+01			
	1-hour	0.08	3.942	47.85	75.44888	115.7	1.10E+00	6.07E+01	13.24	3.79E+00	2.01E+01			
	8-hour	0.7	3.942	17.85	1.25	115.7	1.10E+00	1.10E+00	13.24	3.79E+00	2.44E+00			
	Quarterly	0.130	3.942	6.25E-03	48.56544	115.7	1.14E-02	9.24E-01	13.24	6.78E-01	6.26E+00			
Quone (as VOCs/TDCs) Lead						115.7	2.33E-05	9.51E-08	13.24	9.00E+00	0.00E+00			
Non-Carcinogenic (RfD)														
HCl <sup>3</sup>	24-hour Annual	0.4	3.942			115.7			13.24					
	24-hour	0.4	3.942			115.7			13.24					
	24-hour	0.4	3.942			115.7			13.24					
	24-hour	0.4	3.942			115.7			13.24					
Carcinogenic (RfD)	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
Benzene <sup>4</sup>	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
Dioxin/Furans (TEQ) <sup>5</sup>	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
Formaldehyde <sup>6</sup>	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
Polycyclic Aromatic Matter <sup>4,7</sup>	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					
	Annual	0.125	3.942			115.7			13.24					

**Facility:** Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900  
**4/20/2006 10:04** **Permit/Facility ID:** P-050215 777-00084  
**FACILITY-WIDE MODELING - CRITERIA POLLUTANTS**  
 Modeled CO, NOx, and SO2 to support decision to delete emission limits imposed in the 1993 PTC  
**Ambient Impacts - Facility Wide Full Impact Analysis (based on Screening Modeling, NO CO-LOCATION)**  
**A. Drum Mix Plant:** 550 Tons/year 777 Hours/year 400,000 Tons/year HMA throughput 24 hr/day  
 Maximum emission for each pollutant from any fuel-burning option selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Natural Gas LPG/Propane  
**B. Tank Heater:** 2,1150 MBtu Rated 881 Hours/year  
 Maximum emission for each pollutant from heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil Natural Gas  
**C. Generator:** 54.81 gal/hour 5314 Hours/year  
 Memo, March 14, 2003, Rick Hardy & Kevin Schilling to Mary Anderson (all DEQ State Office Air Division). "Background Concentrations for Use in New Source Review Dispersion Modeling"

**FACILITY-WIDE MODELING required for PM10.**  
<sup>3</sup> Non-Carcinogenic (SBS) Impacts converted to 24-hr average using persistence factor x (hrs/day)/24  
<sup>4</sup> Carcinogenic (SBS) Impacts converted to annual average for dryer using persistence factor x (Tyr)/(Tyr \* 8760)  
 and persistence factor x (hrs/yr)/8760 for heater and generator  
**FW done for CO, NOx, SO2 to evaluate deleting permit limits**

Pollutant	Averaging Period	Drum Dryer	Tank Heater	Generator	Load-out/ Silos/Storage	HMA FACILITY TOTAL	Background Concentration (ug/m3) <sup>4</sup>	Total Ambient Impact (ug/m3)	NAAQS (ug/m3)	Percent of NAAQS
		Maximum Predicted Ambient Impact (ug/m3)	Maximum Predicted Ambient Impact (ug/m3)	Maximum Predicted Ambient Impact (ug/m3)	Maximum Predicted Ambient Impact (ug/m3)	Maximum Predicted Ambient Impact (ug/m3)				
PM-10	24-hour	19.85	1.43	1.97	40.65	63.88	73	137	150	91.3%
	Annual	0.331	0.03	0.24	0.70	1.30	26	27	50	54.6%
CO	1-hour	281.9	20.15	84.52	1042.3	1428.8	3,800	5,029	40,000	12.6%
	8-hour	197.3	14.11	59.17	218.5	489.1	2,308	2,769	10,000	27.9%
NO <sub>2</sub>	Annual	0.782	0.31	15.44		16.54	17	34	100	33.5%
	3-hour	169.76	114.11	45.20		329.1	34	363	1,300	27.9%
SO <sub>2</sub>	24-hour	75.45	50.72	20.09		146.3	26	172	365	47.2%
	Annual	1.25	1.10	2.44		4.79	8	13	80	16.0%
Ozone (as VOCs/TOCs)	8-hour	48.57	0.92	6.26		55.75		56	0.05 ppm	
Lead	Quarterly	8.78E-05	9.51E-06	0.00E+00		8.78E-05	3.00E-02	0.03	1.5	2.0%
<b>Non-Carcinogenic (SBS)</b>										
HCl <sup>4</sup>	24-hour								AAC (mg/m <sup>3</sup> ) (24 hr avg)	Percent of AAC
Phosphorus <sup>4</sup>	24-hour								0.375	
Propionaldehyde <sup>4</sup>	24-hour								0.005	
Quinone <sup>4</sup>	24-hour								0.0215	
<b>Carcinogenic (SBS)</b>										
Acetaldehyde <sup>4</sup>	Annual								AACC (ug/m <sup>3</sup> ) (Annual Avg x T- RACT Factor)	Percent of AACC
Arsenic <sup>4</sup>	Annual								4.50E-01	
Benzene <sup>4</sup>	Annual								2.3E-04	
Cadmium <sup>4</sup>	Annual								1.2E-01	
Dioxin/Furans (TEQ)	Annual								5.6E-04	
Hexavalent Chromium <sup>4</sup>	Annual								1.50E-10	
Formaldehyde <sup>4</sup>	Annual								8.3E-05	
Nickel <sup>4</sup>	Annual								7.7E-02	
Polycyclic Organic Matter <sup>4</sup>	Annual								4.2E-03	
	Annual								3.0E-04	

**P-050215, Fac ID 777-00084, Poe Asphalt Paving, HMA Cedarapids#1900, Lewiston  
SCREEN3 MODELING RUNS – DISPERSION FACTORS**

02/06/06

19:06:02

\*\*\* SCREEN3 MODEL RUN \*\*\*

\*\*\* VERSION DATED 95250 \*\*\*

**P-050215, FAC ID 777-00084, POE ASPHALT HMA, CEDARAPIDS#1900 DRUM DRYER**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT

EMISSION RATE (G/S) = .126000

STACK HEIGHT (M) = 7.1933

STK INSIDE DIAM (M) = 1.1186

STK EXIT VELOCITY (M/S) = 18.3133

STK GAS EXIT TEMP (K) = 408.1500

AMBIENT AIR TEMP (K) = 293.0000

RECEPTOR HEIGHT (M) = 1.0000

URBAN/RURAL OPTION = RURAL

BUILDING HEIGHT (M) = .0000

MIN HORIZ BLDG DIM (M) = .0000

MAX HORIZ BLDG DIM (M) = .0000

STACK EXIT VELOCITY WAS CALCULATED FROM

VOLUME FLOW RATE = 38134.000 (ACFM)

BUOY. FLUX = 15.849 M\*\*4/S\*\*3; MOM. FLUX = 75.313 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*

\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*

\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST CONC U10M USTK MIX HT PLUME SIGMA SIGMA

(M) (UG/M\*\*3) STAB (M/S) (M/S) (M) HT (M) Y (M) Z (M) DWASH

5.	.0000	1	1.0	1.0	320.0	177.38	5.87	5.65	NO
100.	.6730	4	20.0	20.0	6400.0	14.40	8.29	4.81	NO
200.	3.798	4	20.0	20.0	6400.0	14.40	15.69	8.72	NO
300.	3.622	4	20.0	20.0	6400.0	14.40	22.74	12.33	NO
400.	2.994	4	15.0	15.0	4800.0	17.91	29.63	15.61	NO
500.	2.566	4	10.0	10.0	3200.0	24.21	36.47	18.93	NO
600.	2.309	4	10.0	10.0	3200.0	24.21	42.99	21.76	NO
700.	2.111	4	8.0	8.0	2560.0	28.47	49.56	24.79	NO
800.	1.908	4	8.0	8.0	2560.0	28.47	55.90	27.46	NO
900.	1.713	4	8.0	8.0	2560.0	28.47	62.18	30.09	NO
1000.	1.633	4	5.0	5.0	1600.0	41.23	68.82	33.53	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 5. M:

233. 3.942 4 20.0 20.0 6400.0 14.40 18.12 9.98 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)

DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED

DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
DWASH=NA MEANS DOWNWASH NOT APPLICABLE,  $X < 3 \cdot LB$

\*\*\*\*\*  
\* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
\* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
\*\*\*\*\*

TERRAIN DISTANCE RANGE (M)  
HT (M) MINIMUM MAXIMUM  
-----  
0. 5. 1000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION MAX CONC DIST TO TERRAIN  
PROCEDURE (UG/M\*\*3) MAX (M) HT (M)  
-----  
SIMPLE TERRAIN 3.942 233. 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

02/10/06  
17:31:49  
\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 95250 \*\*\*

**P-050215, FAC ID 777-00084, POE ASPHALT HMA, CEDARAPIDS #1900 TANK HEATER**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .126000  
STACK HEIGHT (M) = 4.8768 Note: 16-foot stack height  
STK INSIDE DIAM (M) = .2635  
STK EXIT VELOCITY (M/S) = 4.4806 => 14.7 feet/second  
STK GAS EXIT TEMP (K) = 449.8169  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = 1.0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

BOUY. FLUX = .266 M\*\*4/S\*\*3; MOM. FLUX = .227 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST CONC U10M USTK MIX HT PLUME SIGMA SIGMA  
(M) (UG/M\*\*3) STAB (M/S) (M/S) (M) HT (M) Y (M) Z (M) DWASH

-----  
5. .3021E-08 1 3.0 3.0 960.0 7.52 1.81 .87 NO  
100. 115.3 3 1.5 1.5 480.0 10.17 12.55 7.59 NO  
200. 101.1 4 1.0 1.0 320.0 12.81 15.73 8.80 NO  
300. 83.45 4 1.0 1.0 320.0 12.81 22.72 12.30 NO  
400. 62.29 4 1.0 1.0 320.0 12.81 29.54 15.44 NO  
500. 47.15 4 1.0 1.0 320.0 12.81 36.22 18.44 NO  
600. 36.67 4 1.0 1.0 320.0 12.81 42.78 21.33 NO  
700. 29.56 6 1.0 1.0 10000.0 20.74 24.87 11.83 NO  
800. 30.29 6 1.0 1.0 10000.0 20.74 28.00 12.80 NO  
900. 30.17 6 1.0 1.0 10000.0 20.74 31.11 13.75 NO  
1000. 29.52 6 1.0 1.0 10000.0 20.74 34.19 14.67 NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 5. M:  
80. 115.7 3 2.0 2.0 640.0 8.84 10.32 6.24 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
DWASH=NO MEANS NO BUILDING DOWNWASH USED  
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
\* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*

\* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
\*\*\*\*\*

TERRAIN DISTANCE RANGE (M)  
HT (M) MINIMUM MAXIMUM  
-----

0. 5. 1000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION MAX CONC DIST TO TERRAIN  
PROCEDURE (UG/M\*\*3) MAX (M) HT (M)  
-----

SIMPLE TERRAIN 115.7 80. 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

02/06/06  
18:43:55  
\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 95250 \*\*\*

**P-050215, FAC 777-00084, POE ASPHALT PTC, HMA, CEDARAPIDS#1900 GENERATOR**

SIMPLE TERRAIN INPUTS:  
SOURCE TYPE = POINT  
EMISSION RATE (G/S) = .126000  
STACK HEIGHT (M) = 3.9624  
STK INSIDE DIAM (M) = .2042  
STK EXIT VELOCITY (M/S) = 92.0859  
STK GAS EXIT TEMP (K) = 787.0400  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = 1.0000  
URBAN/RURAL OPTION = RURAL  
BUILDING HEIGHT (M) = .0000  
MIN HORIZ BLDG DIM (M) = .0000  
MAX HORIZ BLDG DIM (M) = .0000

STACK EXIT VELOCITY WAS CALCULATED FROM  
VOLUME FLOW RATE = 6390.0000 (ACFM)

BUOY. FLUX = 5.909 M\*\*4/S\*\*3; MOM. FLUX = 32.909 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST CONC U10M USTK MIX HT PLUME SIGMA SIGMA  
(M) (UG/M\*\*3) STAB (M/S) (M/S) (M) HT (M) Y (M) Z (M) DWASH

-----  
5. .0000 1 1.0 1.0 320.0 85.16 4.93 4.67 NO  
100. 12.73 4 20.0 20.0 6400.0 8.02 8.25 4.74 NO  
200. 11.36 4 10.0 10.0 3200.0 12.08 15.74 8.81 NO  
300. 9.297 4 8.0 8.0 2560.0 14.11 22.80 12.44 NO  
400. 7.574 4 5.0 5.0 1600.0 20.20 29.82 15.96 NO  
500. 6.578 4 5.0 5.0 1600.0 20.20 36.44 18.88 NO  
600. 5.756 4 4.0 4.0 1280.0 24.26 43.11 21.99 NO  
700. 5.116 4 3.5 3.5 1120.0 27.16 49.63 24.93 NO  
800. 4.601 4 3.0 3.0 960.0 31.03 56.11 27.88 NO  
900. 4.189 4 3.0 3.0 960.0 31.03 62.36 30.46 NO  
1000. 3.853 4 2.5 2.5 800.0 36.44 68.76 33.41 NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 5. M:  
117. 13.24 4 20.0 20.0 6400.0 8.02 9.61 5.46 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
DWASH=NO MEANS NO BUILDING DOWNWASH USED  
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*

\* SUMMARY OF TERRAIN HEIGHTS ENTERED FOR \*  
\* SIMPLE ELEVATED TERRAIN PROCEDURE \*  
\*\*\*\*\*

TERRAIN DISTANCE RANGE (M)  
HT (M) MINIMUM MAXIMUM  
-----

0. 5. 1000.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION MAX CONC DIST TO TERRAIN  
PROCEDURE (UG/M\*\*3) MAX (M) HT (M)  
-----

SIMPLE TERRAIN 13.24 117. 0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*

**APPENDIX C**

**PERMIT PROCESSING FEE ASSESSMENT**

**P-050215**

**Permit to Construct Processing Fee**

Facility ID/AIRS No.: **777-00084**

Permit No.: **P-060215**

Spreadsheet Date **4/20/2006 10:04**

Facility Owner/Comp **Poe Asphalt Paving, Inc., Portable HMA Cedarapids #1900**

Address: **302 15th Street**

City, State, Zip: **Clarkston, WA 99503**

Facility Contact: **Josh Smith, Highway Division Manager**

Contact Number: **(509) 758-6561**

Contact E-mail:

Permit to Construct Category (IDAPA 58.01.01.225)	Fee
General permit, no facility-specific requirements (Defined as source category specific permit for which the Department has developed standard emission limitations, operating requirements, monitoring and recordkeeping requirements, and that require minimal engineering analysis.	\$500
New source or modification to existing source with increase of emissions < 1 ton per year (TPY)	\$1,000
New source or modification to existing source with increase of emissions < 10 tons per year	\$2,500
New source or modification to existing source with increase of emissions < 100 tons per year	\$5,000
Nonmajor new source or modification to existing source with increase of emissions of 10 TPY to less than 100 TPY.	\$7,500
New major facility or major modification.	\$10,000
Permit modifications where no engineering analysis is required.	\$250
Application submittals for exemption applicability determinations, types, name and ownership changes (see 224.01, .02, and .03)	\$0

**Portable Hot Mix Asphalt Facility PTE Based on:**

A. Drum Mix Plant: **660 Tons/hour** **727 Hours/year** **466,000 throughput** per year throughput  
Maximum emission for each pollutant from any fuel-burning option analyzed in this evaluation.

B. Tank Heater: **2.1168 MMBtu Rated** **861 Hours/year**  
Maximum emission for each pollutant for heater burning any fuel analyzed in this evaluation.

C. Generator: **54.81 gal/hour** **5314 Hours/year** **Small or Large Generator using Diesel Fuel**  
Maximum emission for each pollutant for generator burning any fuel analyzed in this evaluation.

D. Load-out, Silo Filling, and Asphalt Storage Fugitive Emissions: **Is Facility Subject to NSPS? Yes**  
Load-out, silo filling and asphalt storage are not point sources. Fugitive emissions are NOT included in PTE for any source.

Instructions: Input answers to the following questions with a Y or N.

- N Does this facility qualify for a general permit (i.e., concrete batch plant, hot-mix asphalt plant)? Y/N
- Y Did this permit require engineering analysis? Y/N
- N Is this a PSD permit? (IDAPA 58.01.01.205) Y/N

**Annual Emissions of Regulated Pollutants (total change in PTE from HMA facility)**

IDAPA 58.01.01.xx	Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
006.82. c	PM (total)		0	0.0
006.82. b, c	PM-10 (total)	0.29		0.3
006.82. b, c	PM-2.5 (total)		0	0.0
006.82.a, b	CO	11.5	0	11.5
006.82.a, b	NOx	21.3	0	21.3
006.82. b	SO <sub>2</sub>		70.9	-70.9
006.82. b	Ozone (VOCs) <sup>1</sup>		13.1	-13.1
006.82. b	Lead		0	0.0E+00
006.82. e	HAPs		3.72	-3.7
Total Increase (T/yr):				-64.6
Fee Amount based on Emission Increase:				\$1,000
Fee Due (reflects answers to questions above):				\$1,000

Note 1: Total PM and PM-2.5 are included in the table for information only.

Note 2: HAPs includes only federal HAPs; does not include state-only regulated TAPs

**APPENDIX D**  
**AIRS INFORMATION**

**P-050215**

## AIRS/AFS<sup>a</sup> FACILITY-WIDE CLASSIFICATION<sup>b</sup> DATA ENTRY FORM

**Facility Name:** Poe Asphalt  
**Facility Location:** Portable Cedarapids #1900  
**AIRS Number:** 777-00084

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO <sub>2</sub>	SM							U
NO <sub>x</sub>	SM							U
CO	SM							U
PM <sub>10</sub>	SM							U
PT (Particulate)			SM					U
VOC	B							U
THAP (Total HAPs)	SM							
			APPLICABLE SUBPART					
			I					

<sup>a</sup> Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

<sup>b</sup> AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).